# 2020 Index IEEE Journal of Oceanic Engineering Vol. 45

This index covers all technical items—papers, correspondence, reviews, etc.—that appeared in this periodical during 2020, and items from previous years that were commented upon or corrected in 2020. Departments and other items may also be covered if they have been judged to have archival value.

The Author Index contains the primary entry for each item, listed under the first author's name. The primary entry includes the coauthors' names, the title of the paper or other item, and its location, specified by the publication abbreviation, year, month, and inclusive pagination. The Subject Index contains entries describing the item under all appropriate subject headings, plus the first author's name, the publication abbreviation, month, and year, and inclusive pages. Note that the item title is found only under the primary entry in the Author Index.

## AUTHOR INDEX

## A

- Adityawarman, Y., see Chen, M., JOE April 2020 645-655
- Agarwal, A., Agrawal, M., and Kumar, A., Higher-Order-Statistics-Based Direction-of-Arrival Estimation of Multiple Wideband Sources With Single Acoustic Vector Sensor; *JOE Oct. 2020 1439-1449*
- Agrawal, M., see Agarwal, A., JOE Oct. 2020 1439-1449
- Ahn, J., Yasukawa, S., Sonoda, T., Nishida, Y., Ishii, K., and Ura, T., An Optical Image Transmission System for Deep Sea Creature Sampling Missions Using Autonomous Underwater Vehicle; *JOE April 2020 350-361*
- Akhouayri, H., see Khalighi, M.A., JOE Oct. 2020 1611-1621
- Albiez, J., see Saback, R.M., JOE July 2020 799-812
- Alexandri, T., Miller, E., Spanier, E., and Diamant, R., Tracking the Slipper Lobster Using Acoustic Tagging: Testbed Description; *JOE April 2020 577-*585
- Anderson, M., see Stewart, W., JOE July 2020 840-850
- Aragon, D., see Clark, E.B., JOE April 2020 371-384
- Atkins, N.R., see Young, A.M., JOE Oct. 2020 1411-1426
- Auffret, Y., see Bouvet, P., JOE July 2020 1126-1137
- Austeng, A., see Birkenes Lonmo, T.I., JOE Oct. 2020 1552-1563
- Auvinen, M.F., Barclay, D.R., and Coffin, M.E.W., Performance of a Passive Acoustic Linear Array in a Tidal Channel; *JOE Oct. 2020 1564-1573*

Azimi-Sadjadi, M.R., see Klausner, N.H., JOE April 2020 534-546

Azimi-Sadjadi, M.R., see Klausner, N.H., JOE July 2020 1034-1044

## В

- Badiey, M., see Knobles, D.P., JOE Jan. 2020 161-173
- Badiey, M., see Wan, L., JOE Jan. 2020 201-211
- Ballard, M.S., Lee, K.M., McNeese, A.R., Wilson, P.S., Chaytor, J.D., Goff, J.A., and Reed, A.H., *In Situ* Measurements of Compressional Wave Speed During Gravity Coring Operations in the New England Mud Patch; *JOE Jan. 2020 26-38*
- Barbot, S., see Diouf, C., JOE April 2020 656-664
- Barclay, D.R., Bevans, D.A., and Buckingham, M.J., Estimation of the Geoacoustic Properties of the New England Mud Patch From the Vertical Coherence of the Ambient Noise in the Water Column; JOE Jan. 2020 51-59
- Barclay, D.R., see Auvinen, M.F., JOE Oct. 2020 1564-1573
- Barone, B., see Zhang, Y., JOE Oct. 2020 1308-1321
- Bartel, D.W., see Jones, A.D., JOE April 2020 586-606
- Battista, T., Valentinis, F., and Woolsey, C., A Maneuvering Model for an Underwater Vehicle Near a Free Surface—Part I: Motion Without Memory Effects; *JOE Jan. 2020 212-226*
- Battle, D., see Keane, J.R., JOE April 2020 395-403
- Bayle, P.M., see Bryan, O., JOE July 2020 887-897

- Belcourt, J., Holland, C.W., Dosso, S.E., Dettmer, J., and Goff, J.A., Depth-Dependent Geoacoustic Inferences With Dispersion at the New England Mud Patch via Reflection Coefficient Inversion; *JOE Jan.* 2020 69-91
- Belcourt, J., Dosso, S.E., Holland, C.W., and Dettmer, J., Linearized Bayesian Inversion for Experiment Geometry at the New England Mud Patch; *JOE Jan. 2020 60-68*
- Bell, Z.I., Nezvadovitz, J., Parikh, A., Schwartz, E.M., and Dixon, W.E., Global Exponential Tracking Control for an Autonomous Surface Vessel: An Integral Concurrent Learning Approach; JOE April 2020 362-370
- Bellingham, J.G., see Zhang, Y., JOE Oct. 2020 1308-1321
- Beng, K.T., see Chi, C., JOE Oct. 2020 1506-1515
- Beng, K.T., see Chi, C., JOE Oct. 2020 1516-1526
- Berg, H., see Hjelmervik, K.T., JOE Oct. 2020 1527-1537
- Bevans, D.A., see Barclay, D.R., JOE Jan. 2020 51-59
- Bilen, S.G., see Taudien, J.Y., JOE July 2020 1078-1090
- Birch, J.M., see Zhang, Y., JOE Oct. 2020 1308-1321
- Birkenes Lonmo, T.I., Austeng, A., and Hansen, R.E., Improving Swath Sonar Water Column Imagery and Bathymetry With Adaptive Beamforming; *JOE* Oct. 2020 1552-1563
- Blanford, T.E., see Brown, D.C., JOE Oct. 2020 1497-1505
- Blanke, M., see Heyn, H., JOE July 2020 898-914
- Blenkinsopp, C.E., see Bryan, O., JOE July 2020 887-897
- Bodenmann, A., see Sangekar, M.N., JOE Oct. 2020 1252-1267
- Bonnel, J., see Lin, Y., JOE Jan. 2020 174-188
- Bonnel, J., Dosso, S.E., Eleftherakis, D., and Chapman, N.R., Trans-Dimensional Inversion of Modal Dispersion Data on the New England Mud Patch; *JOE Jan. 2020 116-130*
- Bosch, J., Istenio, K., Gracias, N., Garcia, R., and Ridao, P., Omnidirectional Multicamera Video Stitching Using Depth Maps; JOE Oct. 2020 1337-1352
- Bouvet, P., and Auffret, Y., On the Achievable Rate of Multiple-Input–Multiple-Output Underwater Acoustic Communications; JOE July 2020 1126-1137
- Bovcon, B., see Muhovic, J., JOE July 2020 786-798
- Bovik, A.C., see Moreno-Roldan, J., JOE Jan. 2020 342-346
- Branch, A., see Clark, E.B., JOE April 2020 371-384
- Bring, M., see Wild, M., JOE April 2020 480-488

Brown, D.C., Gerg, I.D., and Blanford, T.E., Interpolation Kernels for Synthetic Aperture Sonar Along-Track Motion Estimation; JOE Oct. 2020 1497-1505

- Brown, E.M., Lin, Y., Chaytor, J.D., and Siegmann, W.L., Geoacoustic Inversion for a New England Mud Patch Sediment Using the Silt-Suspension Theory of Marine Mud; *JOE Jan. 2020 144-160*
- Bruder, B., Cristaudo, D., and Puleo, J.A., Smart Surrogate Munitions for Nearshore Unexploded Ordnance Mobility/Burial Studies; JOE Jan. 2020 284-303
- Bryan, O., Bayle, P.M., Blenkinsopp, C.E., and Hunter, A.J., Breaking Wave Imaging Using Lidar and Sonar; JOE July 2020 887-897
- Bryant, M., see Stewart, W., JOE July 2020 840-850
- Bryne, T.H., see Jorgensen, E.K., JOE Oct. 2020 1450-1465
- Buck, J.R., see Tuladhar, S.R., JOE April 2020 500-510
- Buckingham, M.J., see Knobles, D.P., JOE Jan. 2020 161-173
- Buckingham, M.J., see Barclay, D.R., JOE Jan. 2020 51-59
- Buschinelli, P., see Matos, G., JOE July 2020 937-945

## С

Cai, M., see Wu, S., JOE July 2020 851-861

Calantoni, J., see Klammler, H., JOE July 2020 927-936

- Canedo C., J.M., see Ruezga, A., JOE April 2020 472-479
- Capdeville, Y., see Mizuno, K., JOE July 2020 772-785

- Cardenas, P., and de Barros, E.A., Estimation of AUV Hydrodynamic Coefficients Using Analytical and System Identification Approaches; JOE Oct. 2020 1157-1176
- Carreras, M., see Meurer, C., JOE July 2020 946-978
- Casini, S., see Razzanelli, M., JOE Oct. 2020 1235-1251
- Chakraborty, A., see Sadhukhan, B., JOE July 2020 871-886
- Chao, Y., see Clark, E.B., JOE April 2020 371-384
- Chapman, N.R., see Bonnel, J., JOE Jan. 2020 116-130
- Chaytor, J.D., see Ballard, M.S., JOE Jan. 2020 26-38
- Chaytor, J.D., see Brown, E.M., JOE Jan. 2020 144-160
- Chaytor, J.D., see Knobles, D.P., JOE Jan. 2020 161-173
- Chemori, A., see Guerrero, J., JOE Oct. 2020 1190-1202
- Chen, C., Lei, B., Ma, Y., Liu, Y., and Wang, Y., Diurnal Fluctuation of Shallow-Water Acoustic Propagation in the Cold Dome Off Northeastern Taiwan in Spring; *JOE July 2020 1099-1111*
- Chen, C., see Yan, J., JOE Oct. 2020 1466-1481
- Chen, M., Syamsudin, F., Kaneko, A., Gohda, N., Howe, B.M., Mutsuda, H., Dinan, A.H., Zheng, H., Huang, C., Taniguchi, N., Zhu, X., Adityawarman, Y., Zhang, C., and Lin, J., Real-Time Offshore Coastal Acoustic Tomography Enabled With Mirror-Transpond Functionality; *JOE April 2020 645-655*
- Chen, S., see Cheng, X., JOE April 2020 451-461
- Chen, Y., see Sun, S., JOE April 2020 563-576
- Chen, Y., see Xiao, L., JOE July 2020 1148-1156
- Chen, Y., see Gu, B., JOE July 2020 1022-1033
- Chen, Z., see Li, M., JOE Oct. 2020 1427-1438
- Cheng, X., Li, G., Skulstad, R., Chen, S., Hildre, H.P., and Zhang, H., A Neural-Network-Based Sensitivity Analysis Approach for Data-Driven Modeling of Ship Motion; *JOE April 2020 451-461*
- Chi, C., Vishnu, H., Beng, K.T., and Chitre, M., Robust Resolution of Velocity Ambiguity for Multifrequency Pulse-to-Pulse Coherent Doppler Sonars; *JOE Oct.* 2020 1506-1515
- Chi, C., Vishnu, H., Beng, K.T., and Chitre, M., Utilizing Orthogonal Coprime Signals for Improving Broadband Acoustic Doppler Current Profilers; JOE Oct. 2020 1516-1526
- Chien, S., see Clark, E.B., JOE April 2020 371-384
- Chitre, M., Excellence in Review 2019; JOE April 2020 347-349
- Chitre, M., see Chi, C., JOE Oct. 2020 1506-1515
- Chitre, M., see Chi, C., JOE Oct. 2020 1516-1526
- Clark, C.J., see Young, A.M., JOE Oct. 2020 1411-1426
- Clark, E.B., Branch, A., Chien, S., Mirza, F., Farrara, J.D., Chao, Y., Fratantoni, D., Aragon, D., Schofield, O., Flexas, M.M., and Thompson, A., Station-Keeping Underwater Gliders Using a Predictive Ocean Circulation Model and Applications to SWOT Calibration and Validation; *JOE April* 2020 371-384
- Coffin, M.E.W., see Auvinen, M.F., JOE Oct. 2020 1564-1573
- Colas, F., see Diouf, C., JOE April 2020 656-664
- Conceicao, A.G.S., see Saback, R.M., JOE July 2020 799-812
- Creuze, V., see Guerrero, J., JOE Oct. 2020 1190-1202
- Cristaudo, D., see Bruder, B., JOE Jan. 2020 284-303
- Cristini, P., see Mizuno, K., JOE July 2020 772-785

## D

- Dahl, P.H., Dall'Osto, D.R., Vector Acoustic Analysis of Time-Separated Modal Arrivals From Explosive Sound Sources During the 2017 Seabed Characterization Experiment; *JOE Jan. 2020 131-143*
- Dahl, P.H., see Wilson, P.S., JOE Jan. 2020 14-25
- Dai, Y., Yu, S., and Yan, Y., An Adaptive EKF-FMPC for the Trajectory Tracking of UVMS; JOE July 2020 699-713
- Dall'Osto, D.R., see Dahl, P.H., JOE Jan. 2020 131-143
- de Barros, E.A., see Cardenas, P., JOE Oct. 2020 1157-1176
- Deki, M., see Mizuno, K., JOE Oct. 2020 1386-1395
- DeLong, E.F., see Zhang, Y., JOE Oct. 2020 1308-1321
- Deng, K., see Huang, X., JOE Oct. 2020 1538-1551
- Deng, Y., Zhang, X., and Zhang, G., Line-of-Sight-Based Guidance and Adaptive Neural Path-Following Control for Sailboats; *JOE Oct. 2020 1177-1189* Dettmer, J., see Belcourt, J., JOE Jan. 2020 69-91

- Dettmer, J., see Belcourt, J., JOE Jan. 2020 60-68
- Diamant, R., see Alexandri, T., JOE April 2020 577-585
- Dinan, A.H., see Chen, M., JOE April 2020 645-655
- Ding, N., see Zhao, S., JOE Oct. 2020 1482-1496
- Diouf, C., Quintard, V., Ghisa, L., Guegan, M., Perennou, A., Gautier, L., Tardivel, M., Barbot, S., Dutreuil, V., and Colas, F., Design, Characterization, and Test of a Versatile Single-Mode Power-Over-Fiber and Communication System for Seafloor Observatories; *JOE April 2020 656-664*
- Dixon, W.E., see Bell, Z.I., JOE April 2020 362-370
- Dobre, O.A., see Zhang, Y., JOE July 2020 1112-1125
- Dosso, S.E., see Tollefsen, D., JOE Jan. 2020 189-200
- Dosso, S.E., see Belcourt, J., JOE Jan. 2020 69-91
- Dosso, S.E., see Bonnel, J., JOE Jan. 2020 116-130
- Dosso, S.E., see Belcourt, J., JOE Jan. 2020 60-68
- Du, J., see Zhu, G., JOE April 2020 442-450
- Du, T., see Liao, Y., JOE July 2020 714-723
- Dutreuil, V., see Diouf, C., JOE April 2020 656-664

## E

- Ebihara, T., Ogasawara, H., and Leus, G., Underwater Acoustic Communication Using Multiple-Input–Multiple-Output Doppler-Resilient Orthogonal Signal Division Multiplexing; JOE Oct. 2020 1594-1610
- Eleftherakis, D., see Bonnel, J., JOE Jan. 2020 116-130
- Emery, B.M., Evaluation of Alternative Direction-of-Arrival Methods for Oceanographic HF Radars; JOE July 2020 990-1003
- Emery, W.J., see Li, M., JOE Oct. 2020 1427-1438

#### F

- Fagan, A.I., see Kubicko, J.S., JOE April 2020 607-630
- Farrara, J.D., see Clark, E.B., JOE April 2020 371-384
- Flexas, M.M., see Clark, E.B., JOE April 2020 371-384
- Forczmanski, P., see Maleika, W., JOE Oct. 2020 1353-1369
- Foreman, G., see Zhang, Y., JOE Oct. 2020 1308-1321
- Forrest, A.L., see Keane, J.R., JOE April 2020 395-403
- Fossen, T.I., see Jorgensen, E.K., JOE Oct. 2020 1450-1465
- Francisco Fuentes-Perez, J., see Meurer, C., JOE July 2020 946-978
- Fratantoni, D., see Clark, E.B., JOE April 2020 371-384
- Fu, J., see Sun, S., JOE Oct. 2020 1268-1279
- Fukami, H., see Mizuno, K., JOE Oct. 2020 1386-1395

## G

- Garcia, R., see Bosch, J., JOE Oct. 2020 1337-1352
- Gautier, L., see Diouf, C., JOE April 2020 656-664
- Gazzah, H., and Jesus, S.M., Closed-Form Estimation of Normal Modes From a Partially Sampled Water Column; JOE Oct. 2020 1574-1582
- Gerg, I.D., see Brown, D.C., JOE Oct. 2020 1497-1505
- Germain, G., see Young, A.M., JOE Oct. 2020 1411-1426
- Gerstoft, P., see Michalopoulou, Z., JOE Jan. 2020 92-102
- Ghisa, L., see Diouf, C., JOE April 2020 656-664
- Gibson, S.B., and Stilwell, D.J., Hydrodynamic Parameter Estimation for Autonomous Underwater Vehicles; JOE April 2020 385-394
- Gill, E.W., see Silva, M.T., JOE July 2020 1004-1021
- Godou, W., see Lwin, K.N., JOE Jan. 2020 247-270
- Goff, J.A., see Ballard, M.S., JOE Jan. 2020 26-38
- Goff, J.A., see Belcourt, J., JOE Jan. 2020 69-91
- Goff, J.A., see Knobles, D.P., JOE Jan. 2020 161-173
- Goff, J.A., see Wan, L., JOE Jan. 2020 201-211
- Gohda, N., see Chen, M., JOE April 2020 645-655
- Gracias, N., see Bosch, J., JOE Oct. 2020 1337-1352
- Gu, B., Chen, Y., Liu, X., Zhou, F., and Jiang, R., Distributed Convex Optimization Compressed Sensing Method for Sparse Planar Array Synthesis in 3-D Imaging Sonar Systems; *JOE July 2020 1022-1033*
- Guan, X., see Yan, J., JOE Oct. 2020 1466-1481
- Guegan, M., see Diouf, C., JOE April 2020 656-664

- Guerrero, J., Torres, J., Creuze, V., and Chemori, A., Observation-Based Nonlinear Proportional–Derivative Control for Robust Trajectory Tracking for Autonomous Underwater Vehicles; *JOE Oct. 2020 1190-1202*
- Guo, J., see Guo, W., JOE April 2020 489-499
- Guo, W., Piao, S., Yang, T.C., Guo, J., and Iqbal, K., High-Resolution Power Spectral Estimation Method Using Deconvolution; *JOE April 2020 489-499* Guo, Y., Li, H., and Zhuang, P., Underwater Image Enhancement Using a Multi-
- scale Dense Generative Adversarial Network; *JOE July 2020 862-870*
- Gupta, S.K., see Shah, B.C., JOE July 2020 813-830

## Н

- Han, X., see Tao, J., JOE Oct. 2020 1622-1631
- Hannay, D.E., see Urazghildiiev, I.R., JOE July 2020 1091-1098
- Hansen, R.E., see Myers, V., JOE July 2020 1045-1062
- Hansen, R.E., see Birkenes Lonmo, T.I., JOE Oct. 2020 1552-1563
- Harms, H.A., see Young, A.H., JOE April 2020 631-644
- Hawk, E., see McCarthy, R.A., JOE July 2020 683-698
- He, K., see Zhao, S., JOE Oct. 2020 1482-1496
- Heyn, H., Blanke, M., and Skjetne, R., Ice Condition Assessment Using Onboard Accelerometers and Statistical Change Detection; JOE July 2020 898-914
- Hickman, G.W., see Young, A.H., JOE April 2020 631-644
- Hildre, H.P., see Cheng, X., JOE April 2020 451-461
- Hildre, H.P., see Li, G., JOE Oct. 2020 1219-1234
- Hjelmervik, K., see Wild, M., JOE April 2020 480-488
- Hjelmervik, K.B., and Hjelmervik, K.T., Detection of Oceanographic Fronts on Variable Water Depths Using Empirical Orthogonal Functions; *JOE July* 2020 915-926
- Hjelmervik, K.T., see Hjelmervik, K.B., JOE July 2020 915-926
- Hjelmervik, K.T., Berg, H., and Sastad, T.S., Predicting False Alarm Rates for High-Resolution Antisubmarine Warfare Sonars in a Cluttering Environment Prone to False Alarm Rate Inflation; *JOE Oct. 2020 1527-1537*
- Hobson, B.W., see Zhang, Y., JOE Oct. 2020 1308-1321
- Hoff, L., see Wild, M., JOE April 2020 480-488
- Holland, C.W., see Belcourt, J., JOE Jan. 2020 69-91
- Holland, C.W., see Belcourt, J., JOE Jan. 2020 60-68
- Howe, B.M., see Chen, M., JOE April 2020 645-655
- Hranilovic, S., see Khalighi, M.A., JOE Oct. 2020 1611-1621
- Huang, C., see Chen, M., JOE April 2020 645-655
- Huang, C., see Yang, R., JOE Oct. 2020 1396-1410
- Huang, C., see Huang, X., JOE Oct. 2020 1538-1551
- Huang, W., see Silva, M.T., JOE July 2020 1004-1021
- Huang, X., Huang, C., Zhai, G., Lu, X., Xiao, G., Sui, L., and Deng, K., Data Processing Method of Multibeam Bathymetry Based on Sparse Weighted LS-SVM Machine Algorithm; *JOE Oct. 2020 1538-1551*
- Hunter, A.J., see Bryan, O., JOE July 2020 887-897

## I

Ide, K., see Lagor, F.D., JOE Oct. 2020 1203-1218 Innocenti, M., see Razzanelli, M., JOE Oct. 2020 1235-1251 Iqbal, K., see Guo, W., JOE April 2020 489-499 Ishii, K., see Ahn, J., JOE April 2020 350-361 Istenio, K., see Bosch, J., JOE Oct. 2020 1337-1352

## J

Jackson, D.R., see Yang, J., JOE Jan. 2020 39-50 Jayasinghe, S.G., see Makavita, C.D., JOE Jan. 2020 227-246 Jesus, S.M., see Gazzah, H., JOE Oct. 2020 1574-1582 Jiang, D., see Xiao, L., JOE July 2020 1148-1156 Jiang, Q., see Liao, Y., JOE July 2020 714-723 Jiang, R., see Gu, B., JOE July 2020 1022-1033 Jiang, W., see Liao, Y., JOE July 2020 714-723 Johannsson, H., see Keane, J.R., JOE April 2020 395-403

- Jones, A.D., Zinoviev, A., and Bartel, D.W., Approximate Solutions for Surface Reflection Loss Inclusive of a Practical Model of Refraction in the Wind-Driven Bubbly Layer; *JOE April 2020 586-606*
- Jorgensen, E.K., Fossen, T.I., Bryne, T.H., and Schjolberg, I., Underwater Position and Attitude Estimation Using Acoustic, Inertial, and Depth Measurements; JOE Oct. 2020 1450-1465
- Joseph, K.J., see Sadhukhan, B., JOE July 2020 871-886

## K

- Kaess, M., see Westman, E., JOE Oct. 2020 1280-1294
- Kaneko, A., see Chen, M., JOE April 2020 645-655
- Karl, D.M., see Zhang, Y., JOE Oct. 2020 1308-1321
- Kawakubo, A., see Mizuno, K., JOE Oct. 2020 1386-1395
- Kazarova, A.Y., see Virovlyansky, A.L., JOE Oct. 2020 1583-1593
- Keane, J.R., Forrest, A.L., Johannsson, H., and Battle, D., Autonomous Underwater Vehicle Homing With a Single Range-Only Beacon; *JOE April 2020* 395-403
- Khalighi, M.A., Akhouayri, H., and Hranilovic, S., Silicon-Photomultiplier-Based Underwater Wireless Optical Communication Using Pulse-Amplitude Modulation; JOE Oct. 2020 1611-1621
- Kieft, B., see Zhang, Y., JOE Oct. 2020 1308-1321
- Klammler, H., Sheremet, A., and Calantoni, J., Seafloor Burial of Surrogate Unexploded Ordnance by Wave-Induced Sediment Instability; *JOE July* 2020 927-936
- Klausner, N.H., and Azimi-Sadjadi, M.R., Performance Prediction and Estimation for Underwater Target Detection Using Multichannel Sonar; *JOE April* 2020 534-546
- Klausner, N.H., and Azimi-Sadjadi, M.R., Manifold-Based Classification of Underwater Unexploded Ordnance in Low-Frequency Sonar; *JOE July 2020* 1034-1044
- Knobles, D.P., see Tollefsen, D., JOE Jan. 2020 189-200
- Knobles, D.P., see Wilson, P.S., JOE Jan. 2020 14-25
- Knobles, D.P., see Lin, Y., JOE Jan. 2020 174-188
- Knobles, D.P., Wilson, P.S., Goff, J.A., Wan, L., Buckingham, M.J., Chaytor, J.D., and Badiey, M., Maximum Entropy Derived Statistics of Sound-Speed Structure in a Fine-Grained Sediment Inferred From Sparse Broadband Acoustic Measurements on the New England Continental Shelf; *JOE Jan.* 2020 161-173
- Knobles, D.P., see Wan, L., JOE Jan. 2020 201-211
- Knobles, D.P., see Wilson, P.S., JOE Jan. 2020 1-13
- Komatitsch, D., see Mizuno, K., JOE July 2020 772-785
- Kristan, M., see Muhovic, J., JOE July 2020 786-798
- Krolik, J.L., see Young, A.H., JOE April 2020 631-644
- Kruusmaa, M., see Meurer, C., JOE July 2020 946-978
- Kubicko, J.S., Verlinden, C.M., Sarkar, J., Sabra, K.G., Nichols, B.V., Martin, J.S., and Fagan, A.I., Information Content of Ship Noise on a Drifting Volumetric Array for Passive Environmental Sensing; *JOE April 2020 607-630* Kumar, A., see Agarwal, A., JOE Oct. 2020 1439-1449

## L

- Lagor, F.D., Ide, K., and Paley, D.A., Non-Gaussian Estimation of a Potential Flow by an Actuated Lagrangian Sensor Steered to Separating Boundaries by Augmented Observability; *JOE Oct. 2020 1203-1218*
- Lanzagorta, M., and Uhlmann, J., Assessing Feasibility of Secure Quantum Communications Involving Underwater Assets; *JOE July 2020 1138-1147*
- Lee, K.M., see Ballard, M.S., JOE Jan. 2020 26-38

Lei, B., see Chen, C., JOE July 2020 1099-1111

- Leus, G., see Ebihara, T., JOE Oct. 2020 1594-1610
- Li, C., see Zhang, Y., JOE July 2020 1112-1125
- Li, C., see Li, M., JOE Oct. 2020 1427-1438
- Li, D., see Yang, C., JOE April 2020 430-441
- Li, G., see Cheng, X., JOE April 2020 451-461
- Li, G., Hildre, H.P., and Zhang, H., Toward Time-Optimal Trajectory Planning for Autonomous Ship Maneuvering in Close-Range Encounters; *JOE Oct.* 2020 1219-1234

- Li, H., see Guo, Y., JOE July 2020 862-870
- Li, M., see Prendergast, J., JOE Jan. 2020 271-283
- Li, M., Wu, X., Chen, Z., Liu, J., Emery, W.J., and Li, C., A Scheme for Multitarget Lateral Velocity Measurement With High-Frequency Monostatic Radar; *JOE Oct.* 2020 1427-1438
- Lian, L., see Lu, D., JOE July 2020 740-758
- Liao, Y., Jiang, Q., Du, T., and Jiang, W., Redefined Output Model-Free Adaptive Control Method and Unmanned Surface Vehicle Heading Control; *JOE July 2020 714-723*
- Lin, J., see Chen, M., JOE April 2020 645-655
- Lin, M., see Yang, C., JOE April 2020 430-441
- Lin, Y., Bonnel, J., Knobles, D.P., and Wilson, P.S., Broadband Waveform Geoacoustic Inversions With Absolute Travel Time; *JOE Jan. 2020 174-188*
- Lin, Y., see Brown, E.M., JOE Jan. 2020 144-160
- Liu, H., see Zhao, S., JOE Oct. 2020 1482-1496
- Liu, J., see Li, M., JOE Oct. 2020 1427-1438
- Liu, X., see Gu, B., JOE July 2020 1022-1033
- Liu, Y., Yang, Y., Zhang, H., and Zhang, L., Computational Fluid Dynamics Prediction of the Dynamic Behavior of Autonomous Underwater Vehicles; *JOE July 2020 724-739*
- Liu, Y., see Chen, C., JOE July 2020 1099-1111
- Loncar, I., see Mandic, F., JOE July 2020 759-771
- Lu, D., Xiong, C., Zeng, Z., and Lian, L., Adaptive Dynamic Surface Control for a Hybrid Aerial Underwater Vehicle With Parametric Dynamics and Uncertainties; *JOE July 2020 740-758*
- Lu, X., see Huang, X., JOE Oct. 2020 1538-1551
- Luo, X., see Yan, J., JOE Oct. 2020 1466-1481
- Lwin, K.N., Mukada, N., Myint, M., Yamada, D., Yanou, A., Matsuno, T., Saitou, K., Godou, W., Sakamoto, T., and Minami, M., Visual Docking Against Bubble Noise With 3-D Perception Using Dual-Eye Cameras; *JOE Jan. 2020 247-270*
- Lyubavin, L.Y., see Virovlyansky, A.L., JOE Oct. 2020 1583-1593

## М

- Ma, C., see Sun, D., JOE July 2020 1063-1077
- Ma, S., see Shen, Y., JOE July 2020 831-839
- Ma, Y., see Chen, C., JOE July 2020 1099-1111
- Mahmoudian, N., see Page, B.R., JOE April 2020 404-413
- Makavita, C.D., Jayasinghe, S.G., Nguyen, H.D., and Ranmuthugala, D., Experimental Comparison of Two Composite MRAC Methods for UUV Operations With Low Adaptation Gains; *JOE Jan. 2020 227-246*
- Maleika, W., and Forczmanski, P., Adaptive Modeling and Compression of Bathymetric Data With Variable Density; *JOE Oct. 2020 1353-1369*
- Mandeljc, R., see Muhovic, J., JOE July 2020 786-798
- Mandic, F., Miskovic, N., and Loncar, I., Underwater Acoustic Source Seeking Using Time-Difference-of-Arrival Measurements; *JOE July 2020 759-771*
- Mansour, M.H., see Mansour, M.Y., JOE Oct. 2020 1370-1385
- Mansour, M.Y., Mansour, M.H., Mostafa, N.H., and Rayan, M.A., Numerical and Experimental Investigation of Supercavitating Flow Development Over Different Nose Shape Projectiles; *JOE Oct. 2020 1370-1385*
- Marin III, R., see Zhang, Y., JOE Oct. 2020 1308-1321
- Martin, J.S., see Kubicko, J.S., JOE April 2020 607-630
- Matos, G., Buschinelli, P., and Pinto, T., Underwater Laser Triangulation Sensor Model With Flat Refractive Interfaces; *JOE July 2020 937-945*
- Matsumoto, Y., see Mizuno, K., JOE Oct. 2020 1386-1395
- Matsuno, T., see Lwin, K.N., JOE Jan. 2020 247-270
- McCarthy, R.A., Sen Gupta, A., and Hawk, E., Support-Constrained Mixed-Norm Optimization Techniques for Estimating Multipath Activity in Shallow Water Acoustic Channels; *JOE July 2020 683-698*
- McNeese, A.R., see Wilson, P.S., JOE Jan. 2020 14-25
- McNeese, A.R., see Ballard, M.S., JOE Jan. 2020 26-38
- Mei, J., see Sun, D., JOE July 2020 1063-1077
- Mellema, G.R., Improved Active Sonar Tracking in Clutter Using Integrated Feature Data; *JOE Jan. 2020 304-318*
- Merigaud, A., see Pena-Sanchez, Y., JOE April 2020 462-471

- Meurer, C., Francisco Fuentes-Perez, J., Palomeras, N., Carreras, M., and Kruusmaa, M., Differential Pressure Sensor Speedometer for Autonomous Underwater Vehicle Velocity Estimation; *JOE July 2020 946-978*
- Michalopoulou, Z., and Gerstoft, P., Multipath Broadband Localization, Bathymetry, and Sediment Inversion; *JOE Jan. 2020 92-102*
- Miller, E., see Alexandri, T., JOE April 2020 577-585
- Miller, J.H., see Potty, G.R., JOE Jan. 2020 103-115
- Minami, M., see Lwin, K.N., JOE Jan. 2020 247-270
- Mirza, F., see Clark, E.B., JOE April 2020 371-384
- Miskovic, N., see Mandic, F., JOE July 2020 759-771
- Mizuno, K., Cristini, P., Komatitsch, D., and Capdeville, Y., Numerical and Experimental Study of Wave Propagation in Water-Saturated Granular Media Using Effective Method Theories and a Full-Wave Numerical Simulation; *JOE July 2020 772-785*
- Mizuno, K., Terayama, K., Tabeta, S., Sakamoto, S., Matsumoto, Y., Sugimoto, Y., Ogawa, T., Sugimoto, K., Fukami, H., Sakagami, M., Deki, M., and Kawakubo, A., Development of an Efficient Coral-Coverage Estimation Method Using a Towed Optical Camera Array System [Speedy Sea Scanner (SSS)] and Deep-Learning-Based Segmentation: A Sea Trial at the Kujuku-Shima Islands; JOE Oct. 2020 1386-1395
- Moreno-Roldan, J., Poncela, J., Otero, P., and Bovik, A.C., A No-Reference Video Quality Assessment Model for Underwater Networks; *JOE Jan. 2020* 342-346
- Mostafa, N.H., see Mansour, M.Y., JOE Oct. 2020 1370-1385
- Muhovic, J., Mandeljc, R., Bovcon, B., Kristan, M., and Pers, J., Obstacle Tracking for Unmanned Surface Vessels Using 3-D Point Cloud; *JOE July* 2020 786-798
- Mukada, N., see Lwin, K.N., JOE Jan. 2020 247-270
- Mutsuda, H., see Chen, M., JOE April 2020 645-655
- Myers, V., Quidu, I., Zerr, B., Sabo, T.O., and Hansen, R.E., Synthetic Aperture Sonar Track Registration With Motion Compensation for Coherent Change Detection; *JOE July 2020 1045-1062*
- Myint, M., see Lwin, K.N., JOE Jan. 2020 247-270

## Ν

- Negahdaripour, S., Application of Forward-Scan Sonar Stereo for 3-D Scene Reconstruction; JOE April 2020 547-562
- Neilsen, T.B., see Wilson, P.S., JOE Jan. 2020 1-13
- Nezvadovitz, J., see Bell, Z.I., JOE April 2020 362-370
- Nguyen, H.D., see Makavita, C.D., JOE Jan. 2020 227-246
- Nichols, B.V., see Kubicko, J.S., JOE April 2020 607-630
  - Nie, Z., see Zhao, S., JOE Oct. 2020 1482-1496
  - Nishida, Y., see Ahn, J., JOE April 2020 350-361

## 0

O'Reilly, T.C., see Zhang, Y., JOE Oct. 2020 1308-1321 Ogasawara, H., see Ebihara, T., JOE Oct. 2020 1594-1610 Ogawa, T., see Mizuno, K., JOE Oct. 2020 1386-1395 Otero, P., see Moreno-Roldan, J., JOE Jan. 2020 342-346

#### Р

- Page, B.R., and Mahmoudian, N., Simulation-Driven Optimization of Underwater Docking Station Design; JOE April 2020 404-413
- Paley, D.A., see Lagor, F.D., *JOE Oct. 2020 1203-1218*
- Palomeras, N., see Meurer, C., JOE July 2020 946-978
- Pan, X., see Zheng, Z., JOE Jan. 2020 319-341
- Pargett, D., see Zhang, Y., JOE Oct. 2020 1308-1321
- Parikh, A., see Bell, Z.I., JOE April 2020 362-370
- Pelekanakis, K., see Tao, J., JOE Oct. 2020 1622-1631
- Pena-Sanchez, Y., Merigaud, A., and Ringwood, J.V., Short-Term Forecasting of Sea Surface Elevation for Wave Energy Applications: The Autoregressive Model Revisited; JOE April 2020 462-471
- Perennou, A., see Diouf, C., JOE April 2020 656-664
- Pers, J., see Muhovic, J., JOE July 2020 786-798

Peters, K., see Stewart, W., JOE July 2020 840-850
Piao, S., see Guo, W., JOE April 2020 489-499
Pinto, T., see Matos, G., JOE July 2020 937-945
Pollini, L., see Razzanelli, M., JOE Oct. 2020 1235-1251
Poncela, J., see Moreno-Roldan, J., JOE Jan. 2020 342-346
Potty, G.R., and Miller, J.H., Effect of Shear on Modal Arrival Times; JOE Jan. 2020 103-115
Poulos, S., see Zhang, Y., JOE Oct. 2020 1308-1321
Prendergast, J., Li, M., and Sheng, W., A Study on the Effects of Wave Spectra on Wave Energy Conversions; JOE Jan. 2020 271-283
Preston, C.M., see Zhang, Y., JOE Oct. 2020 1308-1321
Pu, H., see Shen, Y., JOE July 2020 831-839

Qiu, L., see Sun, S., JOE April 2020 563-576 Quidu, I., see Myers, V., JOE July 2020 1045-1062 Quintard, V., see Diouf, C., JOE April 2020 656-664

Puleo, J.A., see Bruder, B., JOE Jan. 2020 284-303

## R

Q

Raanan, B., see Zhang, Y., JOE Oct. 2020 1308-1321

Ramm, H., see Zhang, Y., JOE Oct. 2020 1308-1321

Ranganathan, T., Singh, V., and Thondiyath, A., Theoretical and Experimental Investigations on the Design of a Hybrid Depth Controller for a Standalone Variable Buoyancy System—vBuoy; JOE April 2020 414-429

Ranmuthugala, D., see Makavita, C.D., JOE Jan. 2020 227-246

- Rayan, M.A., see Mansour, M.Y., JOE Oct. 2020 1370-1385
- Razzanelli, M., Casini, S., Innocenti, M., and Pollini, L., Development of a Hybrid Simulator for Underwater Vehicles With Manipulators; *JOE Oct.* 2020 1235-1251
- Reed, A.H., see Ballard, M.S., JOE Jan. 2020 26-38

Reis, M., see Saback, R.M., JOE July 2020 799-812

Ridao, P., see Bosch, J., JOE Oct. 2020 1337-1352

- Ringwood, J.V., see Pena-Sanchez, Y., JOE April 2020 462-471
- Rogers, J.S., see Young, A.H., JOE April 2020 631-644
- Roman, B., see Zhang, Y., JOE Oct. 2020 1308-1321

Romano, A., see Zhang, Y., JOE Oct. 2020 1308-1321

Rueda, C.A., see Zhang, Y., JOE Oct. 2020 1308-1321

- Ruezga, A., Canedo C., J.M., Buoy Analysis in a Point-Absorber Wave Energy Converter; JOE April 2020 472-479
- Ryan, J.P., see Zhang, Y., JOE Oct. 2020 1308-1321

## S

Saback, R.M., Conceicao, A.G.S., Santos, T.L.M., Albiez, J., and Reis, M., Nonlinear Model Predictive Control Applied to an Autonomous Underwater Vehicle; *JOE July 2020 799-812* 

Sabo, T.O., see Myers, V., JOE July 2020 1045-1062

- Sabra, K.G., see Kubicko, J.S., JOE April 2020 607-630
- Sadhukhan, B., Chakraborty, A., Joseph, K.J., and Venkatesan, R., Long-Term Estimation of Wave Climate Variability in the Western Bay of Bengal; *JOE* July 2020 871-886
- Saitou, K., see Lwin, K.N., JOE Jan. 2020 247-270
- Sakagami, M., see Mizuno, K., JOE Oct. 2020 1386-1395
- Sakamoto, S., see Mizuno, K., JOE Oct. 2020 1386-1395
- Sakamoto, T., see Lwin, K.N., JOE Jan. 2020 247-270
- Sangekar, M.N., Thornton, B., Bodenmann, A., and Ura, T., Autonomous Landing of Underwater Vehicles Using High-Resolution Bathymetry; *JOE Oct.* 2020 1252-1267
- Santos, T.L.M., see Saback, R.M., JOE July 2020 799-812
- Sarkar, J., see Kubicko, J.S., JOE April 2020 607-630
- Sastad, T.S., see Hjelmervik, K.T., JOE Oct. 2020 1527-1537
- Schjolberg, I., see Jorgensen, E.K., JOE Oct. 2020 1450-1465
- Schofield, O., see Clark, E.B., JOE April 2020 371-384
- Scholin, C.A., see Zhang, Y., JOE Oct. 2020 1308-1321

Schwartz, E.M., see Bell, Z.I., JOE April 2020 362-370

Sen Gupta, A., see McCarthy, R.A., JOE July 2020 683-698

- Shah, B.C., and Gupta, S.K., Long-Distance Path Planning for Unmanned Surface Vehicles in Complex Marine Environment; *JOE July 2020 813-830*
- Shahidi, R., see Silva, M.T., JOE July 2020 1004-1021
- Shen, Y., Pu, H., and Ma, S., Realizing Efficient Front Crawl Stroke With a Wheel-Paddle-Integrated Mechanism: Inspired by Human Competitive Swimming; *JOE July 2020 831-839*
- Sheng, W., see Prendergast, J., JOE Jan. 2020 271-283
- Sheremet, A., see Klammler, H., JOE July 2020 927-936
- Shi, W., see Sun, D., JOE July 2020 1063-1077
- Siegmann, W.L., see Brown, E.M., JOE Jan. 2020 144-160
- Silva, M.T., Shahidi, R., Gill, E.W., and Huang, W., Nonlinear Extraction of Directional Ocean Wave Spectrum From Synthetic Bistatic High-Frequency Surface Wave Radar Data; *JOE July 2020 1004-1021*
- Singh, V., see Ranganathan, T., JOE April 2020 414-429
- Skjetne, R., see Heyn, H., JOE July 2020 898-914
- Skulstad, R., see Cheng, X., JOE April 2020 451-461
- Sonoda, T., see Ahn, J., JOE April 2020 350-361
- Sowmya, A., see Yang, M., JOE April 2020 521-533
- Spanier, E., see Alexandri, T., JOE April 2020 577-585
- Stewart, W., Weisler, W., Anderson, M., Bryant, M., and Peters, K., Dynamic Modeling of Passively Draining Structures for Aerial–Aquatic Unmanned Vehicles; *JOE July 2020 840-850*
- Stilwell, D.J., see Gibson, S.B., JOE April 2020 385-394
- Su, W., see Xiao, L., JOE July 2020 1148-1156
- Sugimoto, K., see Mizuno, K., JOE Oct. 2020 1386-1395
- Sugimoto, Y., see Mizuno, K., JOE Oct. 2020 1386-1395
- Sui, L., see Huang, X., JOE Oct. 2020 1538-1551
- Sun, D., Ma, C., Yang, T.C., Mei, J., and Shi, W., Improving the Performance of a Vector Sensor Line Array by Deconvolution; *JOE July 2020 1063-1077*
- Sun, S., Chen, Y., Qiu, L., Zhang, G., and Zhao, C., Inverse Synthetic Aperture Sonar Imaging of Underwater Vehicles Utilizing 3-D Rotations; *JOE April* 2020 563-576
- Sun, S., Zhang, X., Zheng, C., Fu, J., and Zhao, C., Underwater Acoustical Localization of the Black Box Utilizing Single Autonomous Underwater Vehicle Based on the Second-Order Time Difference of Arrival; *JOE Oct.* 2020 1268-1279
- Syamsudin, F., see Chen, M., JOE April 2020 645-655

## Т

- Tabeta, S., see Mizuno, K., JOE Oct. 2020 1386-1395
- Tan, M., see Yu, J., JOE Oct. 2020 1295-1307
- Tang, H., see Yang, R., JOE Oct. 2020 1396-1410
- Tang, Y., see Xiao, L., JOE July 2020 1148-1156
- Taniguchi, N., see Chen, M., JOE April 2020 645-655
- Tao, J., Wu, Y., Han, X., and Pelekanakis, K., Sparse Direct Adaptive Equalization for Single-Carrier MIMO Underwater Acoustic Communications; *JOE Oct.* 2020 1622-1631

Tardivel, M., see Diouf, C., JOE April 2020 656-664

- Taudien, J.Y., and Bilen, S.G., Correlation Detection of Boundaries in Sonar Applications With Repeated Codes; *JOE July 2020 1078-1090*
- Terayama, K., see Mizuno, K., JOE Oct. 2020 1386-1395
- Thompson, A., see Clark, E.B., JOE April 2020 371-384
- Thondivath, A., see Ranganathan, T., JOE April 2020 414-429
- Thornton, B., Sizing Drop Weights for Deep Diving Submersibles Taking Into Account Nonuniform Seawater Density Profiles; JOE July 2020 979-989
- Thornton, B., see Sangekar, M.N., JOE Oct. 2020 1252-1267
- Tollefsen, D., Dosso, S.E., and Knobles, D.P., Ship-of-Opportunity Noise Inversions for Geoacoustic Profiles of a Layered Mud-Sand Seabed; *JOE Jan.* 2020 189-200
- Torres, J., see Guerrero, J., JOE Oct. 2020 1190-1202
- Tuladhar, S.R., and Buck, J.R., Unit Circle Rectification of the Minimum Variance Distortionless Response Beamformer; JOE April 2020 500-510

- Uhlmann, J., see Lanzagorta, M., JOE July 2020 1138-1147 Ura, T., see Ahn, J., JOE April 2020 350-361
- Ura, T., see Sangekar, M.N., *JOE Oct. 2020 1252-1267*
- Urazghildiiev, I.R., and Hannay, D.E., Localizing Sources Using a Network of
  - Asynchronous Compact Arrays; JOE July 2020 1091-1098

## V

- Valentinis, F., see Battista, T., JOE Jan. 2020 212-226
- Venkatesan, R., see Zhang, Y., JOE July 2020 1112-1125
- Venkatesan, R., see Sadhukhan, B., JOE July 2020 871-886
- Verlinden, C.M., see Kubicko, J.S., JOE April 2020 607-630
- Virovlyansky, A.L., Kazarova, A.Y., and Lyubavin, L.Y., Matched Field Processing in Phase Space; JOE Oct. 2020 1583-1593
- Vishnu, H., see Chi, C., JOE Oct. 2020 1506-1515
- Vishnu, H., see Chi, C., JOE Oct. 2020 1516-1526

## W

- Wan, L., see Knobles, D.P., JOE Jan. 2020 161-173
- Wan, L., Badiey, M., Knobles, D.P., Wilson, P.S., and Goff, J.A., Estimates of Low-Frequency Sound Speed and Attenuation in a Surface Mud Layer Using Low-Order Modes; *JOE Jan. 2020 201-211*
- Wang, N., Yu, J., Yang, B., Zheng, H., and Zheng, B., Vision-Based In Situ Monitoring of Plankton Size Spectra Via a Convolutional Neural Network; JOE April 2020 511-520
- Wang, T., see Wu, S., JOE July 2020 851-861
- Wang, T., see Yu, J., JOE Oct. 2020 1295-1307
- Wang, Y., see Chen, C., JOE July 2020 1099-1111
- Wang, Y., see Yan, J., JOE Oct. 2020 1466-1481
- Wang, Z., see Zhao, S., JOE Oct. 2020 1482-1496
- Wei, Z., see Yang, M., JOE April 2020 521-533
- Weisler, W., see Stewart, W., JOE July 2020 840-850
- Westman, E., and Kaess, M., Degeneracy-Aware Imaging Sonar Simultaneous Localization and Mapping; JOE Oct. 2020 1280-1294
- Wild, M., Bring, M., Hoff, L., and Hjelmervik, K., Characterization of Piezoelectric Material Parameters Through a Global Optimization Algorithm; *JOE April 2020 480-488*
- Wilson, P.S., Knobles, D.P., Dahl, P.H., McNeese, A.R., and Zeh, M.C., Short-Range Signatures of Explosive Sounds in Shallow Water Used for Seabed Characterization; JOE Jan. 2020 14-25
- Wilson, P.S., see Lin, Y., JOE Jan. 2020 174-188
- Wilson, P.S., see Ballard, M.S., JOE Jan. 2020 26-38
- Wilson, P.S., see Knobles, D.P., JOE Jan. 2020 161-173
- Wilson, P.S., see Wan, L., JOE Jan. 2020 201-211
- Wilson, P.S., Knobles, D.P., and Neilsen, T.B., Guest Editorial An Overview of the Seabed Characterization Experiment; JOE Jan. 2020 1-13
- Wilson, S.T., see Zhang, Y., JOE Oct. 2020 1308-1321
- Woolsey, C., see Battista, T., JOE Jan. 2020 212-226
- Wu, S., Cai, M., Yang, C., Wu, W., and Wang, T., Hydrodynamic Shape Optimization of an Autonomous Underwater Vehicle With an Integrated Lifting Line and Viscous Continuous Adjoint Approach; JOE July 2020 851-861
- Wu, S., see Zhou, P., JOE Oct. 2020 1322-1336
- Wu, W., see Wu, S., JOE July 2020 851-861
- Wu, X., see Li, M., JOE Oct. 2020 1427-1438
- Wu, Y., see Tao, J., JOE Oct. 2020 1622-1631
- Wu, Z., see Yu, J., JOE Oct. 2020 1295-1307

## X

Xi, J., Yan, S., Xu, L., Zhang, Z., and Zeng, D., Frequency–Time Domain Turbo Equalization for Underwater Acoustic Communications; *JOE April 2020* 665-679

Xiao, G., see Huang, X., JOE Oct. 2020 1538-1551

- Xiao, L., Jiang, D., Chen, Y., Su, W., and Tang, Y., Reinforcement-Learning-Based Relay Mobility and Power Allocation for Underwater Sensor Networks Against Jamming; *JOE July 2020 1148-1156*
- Xiong, C., see Lu, D., JOE July 2020 740-758

**Xu, L.,** see Xi, J., JOE April 2020 665-679

## Y

- Yamada, D., see Lwin, K.N., JOE Jan. 2020 247-270
- Yamahara, K.M., see Zhang, Y., JOE Oct. 2020 1308-1321
- Yan, J., Zhao, H., Luo, X., Wang, Y., Chen, C., and Guan, X., Asynchronous Localization of Underwater Target Using Consensus-Based Unscented Kalman Filtering; *JOE Oct. 2020 1466-1481*
- Yan, S., see Xi, J., JOE April 2020 665-679
- Yan, Y., see Dai, Y., JOE July 2020 699-713
- Yang, B., see Wang, N., JOE April 2020 511-520
- Yang, C., Lin, M., and Li, D., Improving Steady and Starting Characteristics of Wireless Charging for an AUV Docking System; *JOE April 2020 430-441* Yang, C., see Wu, S., *JOE July 2020 851-861*
- Yang, C., see Zhou, P., JOE Oct. 2020 1322-1336
- Yang, J., and Jackson, D.R., Measurement of Sound Speed in Fine-Grained Sediments During the Seabed Characterization Experiment; *JOE Jan. 2020* 39-50
- Yang, M., Sowmya, A., Wei, Z., and Zheng, B., Offshore Underwater Image Restoration Using Reflection-Decomposition-Based Transmission Map Estimation; JOE April 2020 521-533
- Yang, R., Tang, H., and Huang, C., Numerical Modeling of the Mooring System Failure of an Aquaculture Net Cage System Under Waves and Currents; *JOE* Oct. 2020 1396-1410
- Yang, T.C., see Zheng, Z., JOE Jan. 2020 319-341
- Yang, T.C., see Guo, W., JOE April 2020 489-499
- Yang, T.C., see Sun, D., JOE July 2020 1063-1077
- Yang, Y., see Liu, Y., JOE July 2020 724-739
- Yanou, A., see Lwin, K.N., JOE Jan. 2020 247-270
- Yasukawa, S., see Ahn, J., JOE April 2020 350-361
- Young, A.H., Harms, H.A., Hickman, G.W., Rogers, J.S., and Krolik, J.L., Waveguide-Invariant-Based Ranging and Receiver Localization Using Tonal Sources of Opportunity; *JOE April 2020 631-644*
- Young, A.M., Atkins, N.R., Clark, C.J., and Germain, G., An Unsteady Pressure Probe for the Measurement of Flow Unsteadiness in Tidal Channels; *JOE* Oct. 2020 1411-1426
- Yu, J., see Wang, N., JOE April 2020 511-520
- Yu, J., Wang, T., Wu, Z., and Tan, M., Design of a Miniature Underwater Angleof-Attack Sensor and Its Application to a Self-Propelled Robotic Fish; *JOE Oct.* 2020 1295-1307
- Yu, S., see Dai, Y., JOE July 2020 699-713

## Z

- Zeh, M.C., see Wilson, P.S., JOE Jan. 2020 14-25
- Zeng, D., see Xi, J., JOE April 2020 665-679
- Zeng, Z., see Lu, D., JOE July 2020 740-758
- Zerr, B., see Myers, V., JOE July 2020 1045-1062
- Zhai, G., see Huang, X., JOE Oct. 2020 1538-1551
- Zhang, C., see Chen, M., JOE April 2020 645-655
- Zhang, G., see Sun, S., JOE April 2020 563-576
- Zhang, G., see Deng, Y., JOE Oct. 2020 1177-1189
- Zhang, H., see Cheng, X., JOE April 2020 451-461
- Zhang, H., see Liu, Y., JOE July 2020 724-739
- Zhang, H., see Li, G., JOE Oct. 2020 1219-1234
- Zhang, L., see Liu, Y., JOE July 2020 724-739
- Zhang, X., see Sun, S., JOE Oct. 2020 1268-1279
- Zhang, X., see Deng, Y., JOE Oct. 2020 1177-1189
- Zhang, Y., Venkatesan, R., Dobre, O.A., and Li, C., Efficient Estimation and Prediction for Sparse Time-Varying Underwater Acoustic Channels; *JOE* July 2020 1112-1125

Zhang, Y., Kieft, B., Hobson, B.W., Ryan, J.P., Barone, B., Preston, C.M., Roman, B., Raanan, B., Marin III, R., O'Reilly, T.C., Rueda, C.A., Pargett, D., Yamahara, K.M., Poulos, S., Romano, A., Foreman, G., Ramm, H., Wilson, S.T., DeLong, E.F., Karl, D.M., Birch, J.M., Bellingham, J.G., and Scholin, C.A., Autonomous Tracking and Sampling of the Deep Chlorophyll Maximum Layer in an Open-Ocean Eddy by a Long-Range Autonomous Underwater Vehicle; JOE Oct. 2020 1308-1321

Zhang, Z., see Xi, J., JOE April 2020 665-679

Zhao, C., see Sun, S., JOE April 2020 563-576

Zhao, C., see Sun, S., JOE Oct. 2020 1268-1279

Zhao, H., see Yan, J., JOE Oct. 2020 1466-1481

Zhao, S., Wang, Z., He, K., Nie, Z., Liu, H., and Ding, N., Investigation on Stochastic Model Refinement for Precise Underwater Positioning; JOE Oct. 2020 1482-1496

Zheng, B., see Yang, M., JOE April 2020 521-533

Zheng, B., see Wang, N., JOE April 2020 511-520

Zheng, C., see Sun, S., JOE Oct. 2020 1268-1279

Zheng, H., see Wang, N., JOE April 2020 511-520

Zheng, H., see Chen, M., JOE April 2020 645-655

Zheng, Z., Yang, T.C., and Pan, X., Geoacoustic Inversion Using an Autonomous Underwater Vehicle in Conjunction With Distributed Sensors; JOE Jan. 2020 319-341

Zhou, F., see Gu, B., JOE July 2020 1022-1033

- Zhou, P., Yang, C., Wu, S., and Zhu, Y., Designated Area Persistent Monitoring Strategies for Hybrid Underwater Profilers; JOE Oct. 2020 1322-1336
- Zhu, G., and Du, J., Global Robust Adaptive Trajectory Tracking Control for Surface Ships Under Input Saturation; JOE April 2020 442-450

Zhu, X., see Chen, M., JOE April 2020 645-655

Zhu, Y., see Zhou, P., JOE Oct. 2020 1322-1336

Zhuang, P., see Guo, Y., JOE July 2020 862-870

Zinoviev, A., see Jones, A.D., JOE April 2020 586-606

## SUBJECT INDEX

## Α

#### Accelerometers

- Ice Condition Assessment Using Onboard Accelerometers and Statistical Change Detection. Heyn, H., +, JOE July 2020 898-914
- Vector Acoustic Analysis of Time-Separated Modal Arrivals From Explosive Sound Sources During the 2017 Seabed Characterization Experiment. Dahl, P.H., +, JOE Jan. 2020 131-143

#### Acoustic devices

Localizing Sources Using a Network of Asynchronous Compact Arrays. Urazghildiiev, I.R., +, JOE July 2020 1091-1098

#### Acoustic measurements

- Investigation on Stochastic Model Refinement for Precise Underwater Positioning. Zhao, S., +, JOE Oct. 2020 1482-1496
- Underwater Position and Attitude Estimation Using Acoustic, Inertial, and Depth Measurements. Jorgensen, E.K., +, JOE Oct. 2020 1450-1465

Utilizing Orthogonal Coprime Signals for Improving Broadband Acoustic Doppler Current Profilers. Chi, C., +, JOE Oct. 2020 1516-1526

## Acoustic propagation

Predicting False Alarm Rates for High-Resolution Antisubmarine Warfare Sonars in a Cluttering Environment Prone to False Alarm Rate Inflation. Hjelmervik, K.T., +, JOE Oct. 2020 1527-1537

## Acoustic receivers

Underwater Acoustic Source Seeking Using Time-Difference-of-Arrival Measurements. Mandic, F., +, JOE July 2020 759-771

## Acoustic sensors

Asynchronous Localization of Underwater Target Using Consensus-Based Unscented Kalman Filtering. Yan, J., +, JOE Oct. 2020 1466-1481

## Acoustic signal processing

Broadband Waveform Geoacoustic Inversions With Absolute Travel Time. Lin, Y., +, JOE Jan. 2020 174-188

- Effect of Shear on Modal Arrival Times. Potty, G.R., +, JOE Jan. 2020 103-115
- Geoacoustic Inversion Using an Autonomous Underwater Vehicle in Conjunction With Distributed Sensors. Zheng, Z., +, JOE Jan. 2020 319-341
- Higher-Order-Statistics-Based Direction-of-Arrival Estimation of Multiple Wideband Sources With Single Acoustic Vector Sensor. Agarwal, A., +, JOE Oct. 2020 1439-1449

Improving the Performance of a Vector Sensor Line Array by Deconvolution. Sun, D., +, JOE July 2020 1063-1077

Information Content of Ship Noise on a Drifting Volumetric Array for Passive Environmental Sensing. Kubicko, J.S., +, JOE April 2020 607-630

Linearized Bayesian Inversion for Experiment Geometry at the New England Mud Patch. Belcourt, J., +, JOE Jan. 2020 60-68

Localizing Sources Using a Network of Asynchronous Compact Arrays. Urazghildiiev, I.R., +, JOE July 2020 1091-1098

- Ship-of-Opportunity Noise Inversions for Geoacoustic Profiles of a Layered Mud-Sand Seabed. Tollefsen, D., +, JOE Jan. 2020 189-200
- Short-Range Signatures of Explosive Sounds in Shallow Water Used for Seabed Characterization. Wilson, P.S., +, JOE Jan. 2020 14-25
- Trans-Dimensional Inversion of Modal Dispersion Data on the New England Mud Patch. Bonnel, J., +, JOE Jan. 2020 116-130
- Underwater Acoustic Source Seeking Using Time-Difference-of-Arrival Measurements. Mandic, F., +, JOE July 2020 759-771
- Waveguide-Invariant-Based Ranging and Receiver Localization Using Tonal Sources of Opportunity. Young, A.H., +, JOE April 2020 631-644 Acoustic tomography

Real-Time Offshore Coastal Acoustic Tomography Enabled With Mirror-Transpond Functionality. Chen, M., +, JOE April 2020 645-655

## Acoustic transducers

- Autonomous Underwater Vehicle Homing With a Single Range-Only Beacon. Keane, J.R., +, JOE April 2020 395-403
- Acoustic variables measurement
  - Guest Editorial An Overview of the Seabed Characterization Experiment. Wilson, P.S., +, JOE Jan. 2020 1-13
- Acoustic wave absorption

Numerical and Experimental Study of Wave Propagation in Water-Saturated Granular Media Using Effective Method Theories and a Full-Wave Numerical Simulation. Mizuno, K., +, JOE July 2020 772-785

## Acoustic wave propagation

Estimates of Low-Frequency Sound Speed and Attenuation in a Surface Mud Layer Using Low-Order Modes. Wan, L., +, JOE Jan. 2020 201-211

Guest Editorial An Overview of the Seabed Characterization Experiment. Wilson, P.S., +, JOE Jan. 2020 1-13

## Acoustic wave reflection

- Broadband Waveform Geoacoustic Inversions With Absolute Travel Time. Lin, Y., +, JOE Jan. 2020 174-188
- Estimation of the Geoacoustic Properties of the New England Mud Patch From the Vertical Coherence of the Ambient Noise in the Water Column. Barclay, D.R., +, JOE Jan. 2020 51-59
- Geoacoustic Inversion for a New England Mud Patch Sediment Using the Silt-Suspension Theory of Marine Mud. Brown, E.M., +, JOE Jan. 2020 144-160
- Linearized Bayesian Inversion for Experiment Geometry at the New England Mud Patch. Belcourt, J., +, JOE Jan. 2020 60-68
- Measurement of Sound Speed in Fine-Grained Sediments During the Seabed Characterization Experiment. Yang, J., +, JOE Jan. 2020 39-50
- Numerical and Experimental Study of Wave Propagation in Water-Saturated Granular Media Using Effective Method Theories and a Full-Wave Numerical Simulation. Mizuno, K., +, JOE July 2020 772-785

Short-Range Signatures of Explosive Sounds in Shallow Water Used for Seabed Characterization. Wilson, P.S., +, JOE Jan. 2020 14-25

## Acoustic wave velocity

In Situ Measurements of Compressional Wave Speed During Gravity Coring Operations in the New England Mud Patch. Ballard, M.S., +, JOE Jan. 2020 26-38

## Acoustic waveguides

Effect of Shear on Modal Arrival Times. Potty, G.R., +, JOE Jan. 2020 103-115

- Matched Field Processing in Phase Space. Virovlyansky, A.L., +, JOE Oct. 2020 1583-1593
- Waveguide-Invariant-Based Ranging and Receiver Localization Using Tonal Sources of Opportunity. Young, A.H., +, JOE April 2020 631-644

## Acoustics

- Higher-Order-Statistics-Based Direction-of-Arrival Estimation of Multiple Wideband Sources With Single Acoustic Vector Sensor. Agarwal, A., +, JOE Oct. 2020 1439-1449
- Investigation on Stochastic Model Refinement for Precise Underwater Positioning. Zhao, S., +, JOE Oct. 2020 1482-1496
- Performance of a Passive Acoustic Linear Array in a Tidal Channel. Auvinen, M.F., +, JOE Oct. 2020 1564-1573
- Underwater Acoustical Localization of the Black Box Utilizing Single Autonomous Underwater Vehicle Based on the Second-Order Time Difference of Arrival. Sun, S., +, JOE Oct. 2020 1268-1279
- Utilizing Orthogonal Coprime Signals for Improving Broadband Acoustic Doppler Current Profilers. *Chi, C., +, JOE Oct. 2020 1516-1526*

#### Adaptive control

- Adaptive Dynamic Surface Control for a Hybrid Aerial Underwater Vehicle With Parametric Dynamics and Uncertainties. *Lu, D.*, +, *JOE July 2020* 740-758
- An Adaptive EKF-FMPC for the Trajectory Tracking of UVMS. *Dai*, Y, +, *JOE July 2020 699-713*
- Global Exponential Tracking Control for an Autonomous Surface Vessel: An Integral Concurrent Learning Approach. *Bell, Z.I.*, +, *JOE April 2020* 362-370
- Global Robust Adaptive Trajectory Tracking Control for Surface Ships Under Input Saturation. Zhu, G., +, JOE April 2020 442-450
- Line-of-Sight-Based Guidance and Adaptive Neural Path-Following Control for Sailboats. *Deng, Y.*, +, *JOE Oct. 2020 1177-1189*
- Redefined Output Model-Free Adaptive Control Method and Unmanned Surface Vehicle Heading Control. *Liao*, Y, +, *JOE July 2020 714-723*

#### Adaptive equalizers

Sparse Direct Adaptive Equalization for Single-Carrier MIMO Underwater Acoustic Communications. *Tao*, J., +, *JOE Oct.* 2020 1622-1631

#### Adaptive estimation

Efficient Estimation and Prediction for Sparse Time-Varying Underwater Acoustic Channels. Zhang, Y, +, JOE July 2020 1112-1125

#### Adaptive systems

Line-of-Sight-Based Guidance and Adaptive Neural Path-Following Control for Sailboats. Deng, Y., +, JOE Oct. 2020 1177-1189

## Aerodynamics

- Hydrodynamic Shape Optimization of an Autonomous Underwater Vehicle With an Integrated Lifting Line and Viscous Continuous Adjoint Approach. *Wu, S.*, +, *JOE July 2020 851-861*
- Line-of-Sight-Based Guidance and Adaptive Neural Path-Following Control for Sailboats. Deng, Y., +, JOE Oct. 2020 1177-1189

## Aerospace components

Dynamic Modeling of Passively Draining Structures for Aerial–Aquatic Unmanned Vehicles. *Stewart, W.*, +, *JOE July 2020 840-850* 

#### Aircraft

Dynamic Modeling of Passively Draining Structures for Aerial–Aquatic Unmanned Vehicles. *Stewart, W.*, +, *JOE July 2020 840-850* 

## Aircraft control

Dynamic Modeling of Passively Draining Structures for Aerial–Aquatic Unmanned Vehicles. *Stewart, W.*, +, *JOE July 2020 840-850* 

## Algorithm design and analysis

Autonomous Landing of Underwater Vehicles Using High-Resolution Bathymetry. Sangekar, M.N., +, JOE Oct. 2020 1252-1267

## Amplitude modulation

Inverse Synthetic Aperture Sonar Imaging of Underwater Vehicles Utilizing 3-D Rotations. *Sun, S.*, +, *JOE April 2020 563-576* 

## Anomaly detection

Data Processing Method of Multibeam Bathymetry Based on Sparse Weighted LS-SVM Machine Algorithm. *Huang, X.*, +, *JOE Oct. 2020* 1538-1551

#### Antenna arrays

- A Scheme for Multitarget Lateral Velocity Measurement With High-Frequency Monostatic Radar. *Li*, *M.*, +, *JOE Oct. 2020 1427-1438*
- Approximation theory
  - Underwater Acoustic Source Seeking Using Time-Difference-of-Arrival Measurements. *Mandic, F.,* +, *JOE July 2020 759-771*

## Aquaculture

- Numerical Modeling of the Mooring System Failure of an Aquaculture Net Cage System Under Waves and Currents. *Yang, R., +, JOE Oct. 2020 1396-1410*
- Vision-Based In Situ Monitoring of Plankton Size Spectra Via a Convolutional Neural Network. Wang, N., +, JOE April 2020 511-520

## Array signal processing

- Distributed Convex Optimization Compressed Sensing Method for Sparse Planar Array Synthesis in 3-D Imaging Sonar Systems. *Gu, B.*, +, *JOE July 2020 1022-1033*
- Evaluation of Alternative Direction-of-Arrival Methods for Oceanographic HF Radars. *Emery, B.M., JOE July 2020 990-1003*
- Improving Swath Sonar Water Column Imagery and Bathymetry With Adaptive Beamforming. Birkenes Lonmo, T.I., +, JOE Oct. 2020 1552-1563
- Improving the Performance of a Vector Sensor Line Array by Deconvolution. Sun, D., +, JOE July 2020 1063-1077
- Performance of a Passive Acoustic Linear Array in a Tidal Channel. Auvinen, M.F., +, JOE Oct. 2020 1564-1573
- Unit Circle Rectification of the Minimum Variance Distortionless Response Beamformer. *Tuladhar, S.R., +, JOE April 2020 500-510*

## Asymptotic stability

- An Adaptive EKF-FMPC for the Trajectory Tracking of UVMS. *Dai*, Y, +, *JOE July 2020 699-713*
- Global Exponential Tracking Control for an Autonomous Surface Vessel: An Integral Concurrent Learning Approach. *Bell, Z.I.*, +, *JOE April 2020 362-370*

## Atmospheric boundary layer

Approximate Solutions for Surface Reflection Loss Inclusive of a Practical Model of Refraction in the Wind-Driven Bubbly Layer. *Jones, A.D.*, +, *JOE April 2020 586-606* 

#### Attitude control

Adaptive Dynamic Surface Control for a Hybrid Aerial Underwater Vehicle With Parametric Dynamics and Uncertainties. *Lu, D.*, +, *JOE July 2020* 740-758

#### Autonomous aerial vehicles

- Adaptive Dynamic Surface Control for a Hybrid Aerial Underwater Vehicle With Parametric Dynamics and Uncertainties. *Lu, D.*, +, *JOE July 2020* 740-758
- Dynamic Modeling of Passively Draining Structures for Aerial–Aquatic Unmanned Vehicles. *Stewart, W.*, +, *JOE July 2020 840-850*

## Autonomous underwater vehicles

- Adaptive Dynamic Surface Control for a Hybrid Aerial Underwater Vehicle With Parametric Dynamics and Uncertainties. *Lu, D.*, +, *JOE July 2020* 740-758
- An Optical Image Transmission System for Deep Sea Creature Sampling Missions Using Autonomous Underwater Vehicle. *Ahn, J.*, +, *JOE April* 2020 350-361
- Autonomous Landing of Underwater Vehicles Using High-Resolution Bathymetry. Sangekar, M.N., +, JOE Oct. 2020 1252-1267
- Autonomous Tracking and Sampling of the Deep Chlorophyll Maximum Layer in an Open-Ocean Eddy by a Long-Range Autonomous Underwater Vehicle. *Zhang, Y.*, +, *JOE Oct. 2020 1308-1321*
- Autonomous Underwater Vehicle Homing With a Single Range-Only Beacon. Keane, J.R., +, JOE April 2020 395-403
- Computational Fluid Dynamics Prediction of the Dynamic Behavior of Autonomous Underwater Vehicles. *Liu*, *Y*, +, *JOE July 2020 724-739*
- Designated Area Persistent Monitoring Strategies for Hybrid Underwater Profilers. Zhou, P., +, JOE Oct. 2020 1322-1336
- Differential Pressure Sensor Speedometer for Autonomous Underwater Vehicle Velocity Estimation. *Meurer, C.*, +, *JOE July 2020 946-978*
- Dynamic Modeling of Passively Draining Structures for Aerial–Aquatic Unmanned Vehicles. *Stewart, W.*, +, *JOE July 2020 840-850*

- Estimation of AUV Hydrodynamic Coefficients Using Analytical and System Identification Approaches. Cardenas, P., +, JOE Oct. 2020 1157-1176
- Experimental Comparison of Two Composite MRAC Methods for UUV Operations With Low Adaptation Gains. *Makavita, C.D.*, +, *JOE Jan. 2020* 227-246
- Hydrodynamic Parameter Estimation for Autonomous Underwater Vehicles. Gibson, S.B., +, JOE April 2020 385-394
- Improving Steady and Starting Characteristics of Wireless Charging for an AUV Docking System. *Yang, C.*, +, *JOE April 2020 430-441*
- Nonlinear Model Predictive Control Applied to an Autonomous Underwater Vehicle. Saback, R.M., +, JOE July 2020 799-812
- Realizing Efficient Front Crawl Stroke With a Wheel-Paddle-Integrated Mechanism: Inspired by Human Competitive Swimming. *Shen, Y.*, +, *JOE July 2020 831-839*
- Simulation-Driven Optimization of Underwater Docking Station Design. Page, B.R., +, JOE April 2020 404-413
- Station-Keeping Underwater Gliders Using a Predictive Ocean Circulation Model and Applications to SWOT Calibration and Validation. *Clark, E.B.*, +, *JOE April 2020 371-384*
- Underwater Acoustical Localization of the Black Box Utilizing Single Autonomous Underwater Vehicle Based on the Second-Order Time Difference of Arrival. Sun, S., +, JOE Oct. 2020 1268-1279
- Visual Docking Against Bubble Noise With 3-D Perception Using Dual-Eye Cameras. Lwin, K.N., +, JOE Jan. 2020 247-270

Waveguide-Invariant-Based Ranging and Receiver Localization Using Tonal Sources of Opportunity. Young, A.H., +, JOE April 2020 631-644

#### Azimuth

A Scheme for Multitarget Lateral Velocity Measurement With High-Frequency Monostatic Radar. Li, M., +, JOE Oct. 2020 1427-1438

## В

## Backscatter

Offshore Underwater Image Restoration Using Reflection-Decomposition-Based Transmission Map Estimation. *Yang, M.*, +, *JOE April 2020* 521-533

#### Bathymetry

- Adaptive Modeling and Compression of Bathymetric Data With Variable Density. *Maleika, W.*, +, *JOE Oct. 2020 1353-1369*
- Data Processing Method of Multibeam Bathymetry Based on Sparse Weighted LS-SVM Machine Algorithm. *Huang, X.*, +, *JOE Oct. 2020* 1538-1551
- Improving Swath Sonar Water Column Imagery and Bathymetry With Adaptive Beamforming. Birkenes Lonmo, T.I., +, JOE Oct. 2020 1552-1563
- Linearized Bayesian Inversion for Experiment Geometry at the New England Mud Patch. *Belcourt, J.*, +, *JOE Jan. 2020 60-68*
- Multipath Broadband Localization, Bathymetry, and Sediment Inversion. Michalopoulou, Z., +, JOE Jan. 2020 92-102

## Bayes methods

- Broadband Waveform Geoacoustic Inversions With Absolute Travel Time. Lin, Y, +, JOE Jan. 2020 174-188
- Geoacoustic Inversion for a New England Mud Patch Sediment Using the Silt-Suspension Theory of Marine Mud. *Brown, E.M.*, +, *JOE Jan. 2020* 144-160
- Linearized Bayesian Inversion for Experiment Geometry at the New England Mud Patch. *Belcourt, J.*, +, *JOE Jan. 2020 60-68*
- Ship-of-Opportunity Noise Inversions for Geoacoustic Profiles of a Layered Mud-Sand Seabed. *Tollefsen*, D., +, JOE Jan. 2020 189-200
- Trans-Dimensional Inversion of Modal Dispersion Data on the New England Mud Datab Regard L = 10E Leg. 2000 116 120

Mud Patch. Bonnel, J., +, JOE Jan. 2020 116-130

## **Biology computing**

Vision-Based In Situ Monitoring of Plankton Size Spectra Via a Convolutional Neural Network. Wang, N., +, JOE April 2020 511-520

## Boats

Development of an Efficient Coral-Coverage Estimation Method Using a Towed Optical Camera Array System [Speedy Sea Scanner (SSS)] and Deep-Learning-Based Segmentation: A Sea Trial at the Kujuku-Shima Islands. *Mizuno, K.*, +, *JOE Oct. 2020 1386-1395* 

## Bubbles

- Breaking Wave Imaging Using Lidar and Sonar. Bryan, O., +, JOE July 2020 887-897
- Short-Range Signatures of Explosive Sounds in Shallow Water Used for Seabed Characterization. *Wilson, P.S.*, +, *JOE Jan. 2020 14-25*

## Buoyancy

Autonomous Landing of Underwater Vehicles Using High-Resolution Bathymetry. Sangekar, M.N., +, JOE Oct. 2020 1252-1267

**Buried object detection** 

Manifold-Based Classification of Underwater Unexploded Ordnance in Low-Frequency Sonar. *Klausner, N.H.*, +, *JOE July 2020 1034-1044* 

## С

## Calibration

- An Unsteady Pressure Probe for the Measurement of Flow Unsteadiness in Tidal Channels. *Young, A.M.*, +, *JOE Oct. 2020 1411-1426*
- Station-Keeping Underwater Gliders Using a Predictive Ocean Circulation Model and Applications to SWOT Calibration and Validation. *Clark, E.B.*, +, JOE April 2020 371-384
- Underwater Laser Triangulation Sensor Model With Flat Refractive Interfaces. *Matos*, G., +, *JOE July 2020 937-945*

## Cameras

- Development of an Efficient Coral-Coverage Estimation Method Using a Towed Optical Camera Array System [Speedy Sea Scanner (SSS)] and Deep-Learning-Based Segmentation: A Sea Trial at the Kujuku-Shima Islands. *Mizuno, K.*, +, *JOE Oct. 2020 1386-1395*
- Omnidirectional Multicamera Video Stitching Using Depth Maps. *Bosch, J.*, +, *JOE Oct. 2020 1337-1352*
- Underwater Laser Triangulation Sensor Model With Flat Refractive Interfaces. Matos, G., +, JOE July 2020 937-945
- Visual Docking Against Bubble Noise With 3-D Perception Using Dual-Eye Cameras. Lwin, K.N., +, JOE Jan. 2020 247-270

**Cascade control** 

Nonlinear Model Predictive Control Applied to an Autonomous Underwater Vehicle. Saback, R.M., +, JOE July 2020 799-812

#### **Channel estimation**

- Efficient Estimation and Prediction for Sparse Time-Varying Underwater Acoustic Channels. *Zhang, Y.*, +, *JOE July 2020 1112-1125*
- Frequency–Time Domain Turbo Equalization for Underwater Acoustic Communications. Xi, J., +, JOE April 2020 665-679
- On the Achievable Rate of Multiple-Input–Multiple-Output Underwater Acoustic Communications. *Bouvet, P., +, JOE July 2020 1126-1137*
- Support-Constrained Mixed-Norm Optimization Techniques for Estimating Multipath Activity in Shallow Water Acoustic Channels. *McCarthy, R.A.*, +, *JOE July 2020 683-698*

## Chaos

A Neural-Network-Based Sensitivity Analysis Approach for Data-Driven Modeling of Ship Motion. *Cheng, X.,* +, *JOE April 2020 451-461* 

## Clay

- Estimation of the Geoacoustic Properties of the New England Mud Patch From the Vertical Coherence of the Ambient Noise in the Water Column. *Barclay, D.R.*, +, *JOE Jan. 2020 51-59*
- Geoacoustic Inversion for a New England Mud Patch Sediment Using the Silt-Suspension Theory of Marine Mud. *Brown, E.M.*, +, *JOE Jan. 2020* 144-160

## Climatology

Long-Term Estimation of Wave Climate Variability in the Western Bay of Bengal. Sadhukhan, B., +, JOE July 2020 871-886

#### Closed loop systems

- Global Exponential Tracking Control for an Autonomous Surface Vessel: An Integral Concurrent Learning Approach. *Bell, Z.I.*, +, *JOE April 2020 362-370*
- Global Robust Adaptive Trajectory Tracking Control for Surface Ships Under Input Saturation. Zhu, G., +, JOE April 2020 442-450
- Nonlinear Model Predictive Control Applied to an Autonomous Underwater Vehicle. Saback, R.M., +, JOE July 2020 799-812

10

Theoretical and Experimental Investigations on the Design of a Hybrid Depth Controller for a Standalone Variable Buoyancy System—vBuoy. Ranganathan, T., +, JOE April 2020 414-429

#### **Closed-form solutions**

Closed-Form Estimation of Normal Modes From a Partially Sampled Water Column. *Gazzah, H., +, JOE Oct. 2020 1574-1582* 

## Clutter

- Improved Active Sonar Tracking in Clutter Using Integrated Feature Data. Mellema, G.R., JOE Jan. 2020 304-318
- Predicting False Alarm Rates for High-Resolution Antisubmarine Warfare Sonars in a Cluttering Environment Prone to False Alarm Rate Inflation. *Hjelmervik, K.T.*, +, *JOE Oct. 2020 1527-1537*

## Codes

Correlation Detection of Boundaries in Sonar Applications With Repeated Codes. *Taudien, J.Y.*, +, *JOE July 2020 1078-1090* 

#### **Collision avoidance**

- Obstacle Tracking for Unmanned Surface Vessels Using 3-D Point Cloud. Muhovic, J., +, JOE July 2020 786-798
- Toward Time-Optimal Trajectory Planning for Autonomous Ship Maneuvering in Close-Range Encounters. Li, G., +, JOE Oct. 2020 1219-1234

## Compensation

Nonlinear Model Predictive Control Applied to an Autonomous Underwater Vehicle. Saback, R.M., +, JOE July 2020 799-812

## **Complexity theory**

Sparse Direct Adaptive Equalization for Single-Carrier MIMO Underwater Acoustic Communications. Tao, J., +, JOE Oct. 2020 1622-1631

## **Compressed sensing**

Distributed Convex Optimization Compressed Sensing Method for Sparse Planar Array Synthesis in 3-D Imaging Sonar Systems. *Gu, B.*, +, *JOE July 2020 1022-1033* 

#### **Computational complexity**

- Asynchronous Localization of Underwater Target Using Consensus-Based Unscented Kalman Filtering. Yan, J., +, JOE Oct. 2020 1466-1481
- Distributed Convex Optimization Compressed Sensing Method for Sparse Planar Array Synthesis in 3-D Imaging Sonar Systems. *Gu, B.*, +, *JOE July 2020 1022-1033*
- Efficient Estimation and Prediction for Sparse Time-Varying Underwater Acoustic Channels. *Zhang, Y.*, +, *JOE July 2020 1112-1125*
- Frequency–Time Domain Turbo Equalization for Underwater Acoustic Communications. Xi, J., +, JOE April 2020 665-679

## **Computational fluid dynamics**

- Computational Fluid Dynamics Prediction of the Dynamic Behavior of Autonomous Underwater Vehicles. *Liu*, *Y*, +, *JOE July 2020 724-739*
- Hydrodynamic Shape Optimization of an Autonomous Underwater Vehicle With an Integrated Lifting Line and Viscous Continuous Adjoint Approach. *Wu, S.*, +, *JOE July 2020 851-861*

## Computer vision

- Underwater Image Enhancement Using a Multiscale Dense Generative Adversarial Network. *Guo*, Y., +, *JOE July 2020 862-870*
- Vision-Based In Situ Monitoring of Plankton Size Spectra Via a Convolu-

#### tional Neural Network. *Wang, N.*, +, *JOE April 2020 511-520* Condition monitoring

Ice Condition Assessment Using Onboard Accelerometers and Statistical Change Detection. *Heyn*, *H.*, +, *JOE July 2020 898-914* 

#### **Constraint satisfaction problems**

Nonlinear Model Predictive Control Applied to an Autonomous Underwater Vehicle. Saback, R.M., +, JOE July 2020 799-812

### **Control nonlinearities**

Global Robust Adaptive Trajectory Tracking Control for Surface Ships Under Input Saturation. Zhu, G., +, JOE April 2020 442-450

#### **Control system synthesis**

- Adaptive Dynamic Surface Control for a Hybrid Aerial Underwater Vehicle With Parametric Dynamics and Uncertainties. *Lu, D.*, +, *JOE July 2020* 740-758
- An Adaptive EKF-FMPC for the Trajectory Tracking of UVMS. *Dai*, Y, +, *JOE July 2020 699-713*
- Global Exponential Tracking Control for an Autonomous Surface Vessel: An Integral Concurrent Learning Approach. *Bell, Z.I.*, +, *JOE April 2020* 362-370

- Global Robust Adaptive Trajectory Tracking Control for Surface Ships Under Input Saturation. Zhu, G., +, JOE April 2020 442-450
- Nonlinear Model Predictive Control Applied to an Autonomous Underwater Vehicle. Saback, R.M., +, JOE July 2020 799-812
- Theoretical and Experimental Investigations on the Design of a Hybrid Depth Controller for a Standalone Variable Buoyancy System—vBuoy. Ranganathan, T., +, JOE April 2020 414-429

## Convex programming

Distributed Convex Optimization Compressed Sensing Method for Sparse Planar Array Synthesis in 3-D Imaging Sonar Systems. *Gu, B.*, +, *JOE July 2020 1022-1033* 

## **Convolutional neural nets**

Vision-Based In Situ Monitoring of Plankton Size Spectra Via a Convolutional Neural Network. Wang, N., +, JOE April 2020 511-520

## Cores

Guest Editorial An Overview of the Seabed Characterization Experiment. Wilson, P.S., +, JOE Jan. 2020 1-13

#### **Correlation methods**

Correlation Detection of Boundaries in Sonar Applications With Repeated Codes. *Taudien, J.Y., +, JOE July 2020 1078-1090* 

#### Cost function

Designated Area Persistent Monitoring Strategies for Hybrid Underwater Profilers. Zhou, P., +, JOE Oct. 2020 1322-1336

## **Covariance matrices**

Unit Circle Rectification of the Minimum Variance Distortionless Response Beamformer. *Tuladhar*; S.R., +, JOE April 2020 500-510

## **Cryptographic protocols**

Assessing Feasibility of Secure Quantum Communications Involving Underwater Assets. *Lanzagorta*, M., +, *JOE July 2020 1138-1147* 

## **Current measurement**

Designated Area Persistent Monitoring Strategies for Hybrid Underwater Profilers. Zhou, P., +, JOE Oct. 2020 1322-1336

- Robust Resolution of Velocity Ambiguity for Multifrequency Pulse-to-Pulse Coherent Doppler Sonars. *Chi, C.,* +, *JOE Oct. 2020 1506-1515*
- Utilizing Orthogonal Coprime Signals for Improving Broadband Acoustic Doppler Current Profilers. *Chi, C., +, JOE Oct. 2020 1516-1526*

## D

- Buoy Analysis in a Point-Absorber Wave Energy Converter. Ruezga, A., +, JOE April 2020 472-479
- Hydrodynamic Parameter Estimation for Autonomous Underwater Vehicles. Gibson, S.B., +, JOE April 2020 385-394

## Data analysis

Damping

A Neural-Network-Based Sensitivity Analysis Approach for Data-Driven Modeling of Ship Motion. *Cheng, X., +, JOE April 2020 451-461* 

## Data compression

An Optical Image Transmission System for Deep Sea Creature Sampling Missions Using Autonomous Underwater Vehicle. *Ahn, J.*, +, *JOE April* 2020 350-361

## Data models

Adaptive Modeling and Compression of Bathymetric Data With Variable Density. *Maleika, W.*, +, *JOE Oct. 2020 1353-1369* 

#### Decision theory

Frequency–Time Domain Turbo Equalization for Underwater Acoustic Communications. Xi, J., +, JOE April 2020 665-679

### **Decision trees**

Ice Condition Assessment Using Onboard Accelerometers and Statistical Change Detection. *Heyn*, *H.*, +, *JOE July 2020 898-914* 

## Deconvolution

High-Resolution Power Spectral Estimation Method Using Deconvolution. Guo, W., +, JOE April 2020 489-499

Improving the Performance of a Vector Sensor Line Array by Deconvolution. Sun, D., +, JOE July 2020 1063-1077

## Delays

Underwater Acoustic Communication Using Multiple-Input–Multiple-Output Doppler-Resilient Orthogonal Signal Division Multiplexing. *Ebihara*, *T.*, +, *JOE Oct. 2020 1594-1610* 

## **Design engineering**

Hydrodynamic Shape Optimization of an Autonomous Underwater Vehicle With an Integrated Lifting Line and Viscous Continuous Adjoint Approach. Wu, S., +, JOE July 2020 851-861

## **Digital elevation models**

Adaptive Modeling and Compression of Bathymetric Data With Variable Density. Maleika, W., +, JOE Oct. 2020 1353-1369

## **Direct energy conversion**

A Study on the Effects of Wave Spectra on Wave Energy Conversions. Prendergast, J., +, JOE Jan. 2020 271-283

## **Direction-of-arrival estimation**

Evaluation of Alternative Direction-of-Arrival Methods for Oceanographic HF Radars. Emery, B.M., JOE July 2020 990-1003

- Higher-Order-Statistics-Based Direction-of-Arrival Estimation of Multiple Wideband Sources With Single Acoustic Vector Sensor. Agarwal, A., +, JOE Oct. 2020 1439-1449
- Underwater Acoustic Source Seeking Using Time-Difference-of-Arrival Measurements. Mandic, F., +, JOE July 2020 759-771

#### **Discrete cosine transforms**

Adaptive Modeling and Compression of Bathymetric Data With Variable Density. Maleika, W., +, JOE Oct. 2020 1353-1369

## **Discrete wavelet transforms**

Adaptive Modeling and Compression of Bathymetric Data With Variable Density. Maleika, W., +, JOE Oct. 2020 1353-1369

## **Distance measurement**

Asynchronous Localization of Underwater Target Using Consensus-Based Unscented Kalman Filtering. Yan, J., +, JOE Oct. 2020 1466-1481

#### **Distributed sensors**

Geoacoustic Inversion Using an Autonomous Underwater Vehicle in Conjunction With Distributed Sensors. Zheng, Z., +, JOE Jan. 2020 319-341 Tracking the Slipper Lobster Using Acoustic Tagging: Testbed Description. Alexandri, T., +, JOE April 2020 577-585

## Disturbance observers

Observation-Based Nonlinear Proportional-Derivative Control for Robust Trajectory Tracking for Autonomous Underwater Vehicles. Guerrero, J., +, JOE Oct. 2020 1190-1202

## **Doppler effect**

- Robust Resolution of Velocity Ambiguity for Multifrequency Pulse-to-Pulse Coherent Doppler Sonars. Chi, C., +, JOE Oct. 2020 1506-1515
- Underwater Acoustic Communication Using Multiple-Input-Multiple-Output Doppler-Resilient Orthogonal Signal Division Multiplexing. Ebihara, T., +, JOE Oct. 2020 1594-1610

Utilizing Orthogonal Coprime Signals for Improving Broadband Acoustic Doppler Current Profilers. Chi, C., +, JOE Oct. 2020 1516-1526

#### Drag

- Hydrodynamic Shape Optimization of an Autonomous Underwater Vehicle With an Integrated Lifting Line and Viscous Continuous Adjoint Approach. Wu, S., +, JOE July 2020 851-861
- Numerical and Experimental Investigation of Supercavitating Flow Development Over Different Nose Shape Projectiles. Mansour, M.Y., +, JOE Oct. 2020 1370-1385

#### Drag reduction

Hydrodynamic Shape Optimization of an Autonomous Underwater Vehicle With an Integrated Lifting Line and Viscous Continuous Adjoint Approach. Wu, S., +, JOE July 2020 851-861

E

## Ecology

Autonomous Tracking and Sampling of the Deep Chlorophyll Maximum Layer in an Open-Ocean Eddy by a Long-Range Autonomous Underwater Vehicle. Zhang, Y., +, JOE Oct. 2020 1308-1321

## Ecosystems

Autonomous Tracking and Sampling of the Deep Chlorophyll Maximum Layer in an Open-Ocean Eddy by a Long-Range Autonomous Underwater Vehicle. Zhang, Y., +, JOE Oct. 2020 1308-1321

## **Eddy currents**

Autonomous Tracking and Sampling of the Deep Chlorophyll Maximum Layer in an Open-Ocean Eddy by a Long-Range Autonomous Underwater Vehicle. Zhang, Y., +, JOE Oct. 2020 1308-1321

## Elastic waves

Effect of Shear on Modal Arrival Times. Potty, G.R., +, JOE Jan. 2020 103-115

## Elasticity

Effect of Shear on Modal Arrival Times. Potty, G.R., +, JOE Jan. 2020 103-115

Estimation of the Geoacoustic Properties of the New England Mud Patch From the Vertical Coherence of the Ambient Noise in the Water Column. Barclay, D.R., +, JOE Jan. 2020 51-59

## Electric vehicle charging

Improving Steady and Starting Characteristics of Wireless Charging for an AUV Docking System. Yang, C., +, JOE April 2020 430-441

#### **Energy conservation**

Design, Characterization, and Test of a Versatile Single-Mode Power-Over-Fiber and Communication System for Seafloor Observatories. Diouf, C., +, JOE April 2020 656-664

#### Equalizers

Frequency-Time Domain Turbo Equalization for Underwater Acoustic Communications. Xi, J., +, JOE April 2020 665-679

## Equivalent circuits

Characterization of Piezoelectric Material Parameters Through a Global Optimization Algorithm. Wild, M., +, JOE April 2020 480-488

#### Error statistics

- Assessing Feasibility of Secure Quantum Communications Involving Underwater Assets. Lanzagorta, M., +, JOE July 2020 1138-1147
- Efficient Estimation and Prediction for Sparse Time-Varying Underwater Acoustic Channels. Zhang, Y., +, JOE July 2020 1112-1125
- Reinforcement-Learning-Based Relay Mobility and Power Allocation for Underwater Sensor Networks Against Jamming. Xiao, L., +, JOE July 2020 1148-1156

## Estimation

- Closed-Form Estimation of Normal Modes From a Partially Sampled Water Column. Gazzah, H., +, JOE Oct. 2020 1574-1582
- Development of an Efficient Coral-Coverage Estimation Method Using a Towed Optical Camera Array System [Speedy Sea Scanner (SSS)] and Deep-Learning-Based Segmentation: A Sea Trial at the Kujuku-Shima Islands. Mizuno, K., +, JOE Oct. 2020 1386-1395

#### Estimation error

Robust Resolution of Velocity Ambiguity for Multifrequency Pulse-to-Pulse Coherent Doppler Sonars. Chi, C., +, JOE Oct. 2020 1506-1515

#### **Expectation-maximization algorithms**

Performance Prediction and Estimation for Underwater Target Detection Using Multichannel Sonar. Klausner, N.H., +, JOE April 2020 534-546 Explosives

- Short-Range Signatures of Explosive Sounds in Shallow Water Used for Seabed Characterization. Wilson, P.S., +, JOE Jan. 2020 14-25
- Vector Acoustic Analysis of Time-Separated Modal Arrivals From Explosive Sound Sources During the 2017 Seabed Characterization Experiment. Dahl, P.H., +, JOE Jan. 2020 131-143

## F

#### **Fading channels**

- On the Achievable Rate of Multiple-Input-Multiple-Output Underwater Acoustic Communications. Bouvet, P., +, JOE July 2020 1126-1137
- Reinforcement-Learning-Based Relay Mobility and Power Allocation for Underwater Sensor Networks Against Jamming. Xiao, L., +, JOE July 2020 1148-1156

## **Feature extraction**

- Degeneracy-Aware Imaging Sonar Simultaneous Localization and Mapping. Westman, E., +, JOE Oct. 2020 1280-1294
- Ice Condition Assessment Using Onboard Accelerometers and Statistical Change Detection. Heyn, H., +, JOE July 2020 898-914
- Manifold-Based Classification of Underwater Unexploded Ordnance in Low-Frequency Sonar. Klausner, N.H., +, JOE July 2020 1034-1044

- Obstacle Tracking for Unmanned Surface Vessels Using 3-D Point Cloud. Muhovic, J., +, JOE July 2020 786-798
- Performance Prediction and Estimation for Underwater Target Detection Using Multichannel Sonar. *Klausner, N.H.*, +, *JOE April 2020 534-546*
- Underwater Image Enhancement Using a Multiscale Dense Generative Adversarial Network. *Guo, Y*, +, *JOE July 2020 862-870*

## Feedback

Global Robust Adaptive Trajectory Tracking Control for Surface Ships Under Input Saturation. *Zhu, G.*, +, *JOE April 2020 442-450* 

## Field programmable gate arrays

Design, Characterization, and Test of a Versatile Single-Mode Power-Over-Fiber and Communication System for Seafloor Observatories. *Diouf, C.*, +, *JOE April 2020 656-664* 

## Filtering

- A Scheme for Multitarget Lateral Velocity Measurement With High-Frequency Monostatic Radar. Li, M., +, JOE Oct. 2020 1427-1438
- Non-Gaussian Estimation of a Potential Flow by an Actuated Lagrangian Sensor Steered to Separating Boundaries by Augmented Observability. *Lagor, F.D.,* +, *JOE Oct. 2020 1203-1218*

## Filtering algorithms

Sparse Direct Adaptive Equalization for Single-Carrier MIMO Underwater Acoustic Communications. *Tao*, J., +, *JOE Oct.* 2020 1622-1631

## **Filtering theory**

- Frequency–Time Domain Turbo Equalization for Underwater Acoustic Communications. Xi, J., +, JOE April 2020 665-679
- Waveguide-Invariant-Based Ranging and Receiver Localization Using Tonal Sources of Opportunity. Young, A.H., +, JOE April 2020 631-644 Force control
- Hydrodynamic Parameter Estimation for Autonomous Underwater Vehicles. Gibson, S.B., +, JOE April 2020 385-394

#### Fourier analysis

High-Resolution Power Spectral Estimation Method Using Deconvolution. Guo, W., +, JOE April 2020 489-499

Frequency measurement

Robust Resolution of Velocity Ambiguity for Multifrequency Pulse-to-Pulse Coherent Doppler Sonars. Chi, C., +, JOE Oct. 2020 1506-1515

## **Frequency response**

An Unsteady Pressure Probe for the Measurement of Flow Unsteadiness in Tidal Channels. Young, A.M., +, JOE Oct. 2020 1411-1426

## G

#### Gaussian mixture model

Non-Gaussian Estimation of a Potential Flow by an Actuated Lagrangian Sensor Steered to Separating Boundaries by Augmented Observability. *Lagor, F.D.,* +, *JOE Oct. 2020 1203-1218* 

## Geometry

Autonomous Landing of Underwater Vehicles Using High-Resolution Bathymetry. Sangekar, M.N., +, JOE Oct. 2020 1252-1267

## Geophysical fluid dynamics

Seafloor Burial of Surrogate Unexploded Ordnance by Wave-Induced Sediment Instability. *Klammler*, H., +, JOE July 2020 927-936

## Geophysical image processing

An Optical Image Transmission System for Deep Sea Creature Sampling Missions Using Autonomous Underwater Vehicle. *Ahn, J.*, +, *JOE April* 2020 350-361

- Manifold-Based Classification of Underwater Unexploded Ordnance in Low-Frequency Sonar. *Klausner*, *N.H.*, +, *JOE July 2020 1034-1044*
- Synthetic Aperture Sonar Track Registration With Motion Compensation for Coherent Change Detection. *Myers*, *V.*, +, *JOE July 2020 1045-1062*

## Geophysical signal processing

- Broadband Waveform Geoacoustic Inversions With Absolute Travel Time. Lin, Y, +, JOE Jan. 2020 174-188
- Effect of Shear on Modal Arrival Times. Potty, G.R., +, JOE Jan. 2020 103-115
- Estimation of the Geoacoustic Properties of the New England Mud Patch From the Vertical Coherence of the Ambient Noise in the Water Column. *Barclay, D.R.*, +, *JOE Jan. 2020 51-59*

- Evaluation of Alternative Direction-of-Arrival Methods for Oceanographic HF Radars. *Emery, B.M., JOE July 2020 990-1003*
- Geoacoustic Inversion Using an Autonomous Underwater Vehicle in Conjunction With Distributed Sensors. Zheng, Z., +, JOE Jan. 2020 319-341
- Ship-of-Opportunity Noise Inversions for Geoacoustic Profiles of a Layered Mud-Sand Seabed. *Tollefsen, D.*, +, *JOE Jan. 2020 189-200*
- Trans-Dimensional Inversion of Modal Dispersion Data on the New England Mud Patch. *Bonnel*, J., +, JOE Jan. 2020 116-130

## Geophysics computing

Ice Condition Assessment Using Onboard Accelerometers and Statistical Change Detection. *Heyn*, *H.*, +, *JOE July 2020 898-914* 

## Global navigation satellite system

Investigation on Stochastic Model Refinement for Precise Underwater Positioning. Zhao, S., +, JOE Oct. 2020 1482-1496

## **Global Positioning System**

- Designated Area Persistent Monitoring Strategies for Hybrid Underwater Profilers. Zhou, P., +, JOE Oct. 2020 1322-1336
- Development of an Efficient Coral-Coverage Estimation Method Using a Towed Optical Camera Array System [Speedy Sea Scanner (SSS)] and Deep-Learning-Based Segmentation: A Sea Trial at the Kujuku-Shima Islands. *Mizuno, K.*, +, *JOE Oct. 2020 1386-1395*

## Grain size

- In Situ Measurements of Compressional Wave Speed During Gravity Coring Operations in the New England Mud Patch. Ballard, M.S., +, JOE Jan. 2020 26-38
- Numerical and Experimental Study of Wave Propagation in Water-Saturated Granular Media Using Effective Method Theories and a Full-Wave Numerical Simulation. *Mizuno, K.*, +, *JOE July 2020 772-785*

#### Granular materials

Numerical and Experimental Study of Wave Propagation in Water-Saturated Granular Media Using Effective Method Theories and a Full-Wave Numerical Simulation. *Mizuno, K.*, +, *JOE July 2020 772-785* 

## Graph theory

Long-Distance Path Planning for Unmanned Surface Vehicles in Complex Marine Environment. Shah, B.C., +, JOE July 2020 813-830

#### Gravity

Hall effect

Numerical Modeling of the Mooring System Failure of an Aquaculture Net Cage System Under Waves and Currents. *Yang, R.*, +, *JOE Oct. 2020 1396-1410* 

#### Н

## Design of a Miniature Underwater Angle-of-Attack Sensor and Its Application to a Self-Propelled Robotic Fish. *Yu, J.*, +, *JOE Oct. 2020 1295-1307* **Higher order statistics**

Higher-Order-Statistics-Based Direction-of-Arrival Estimation of Multiple Wideband Sources With Single Acoustic Vector Sensor. *Agarwal, A.*, +, *JOE Oct. 2020 1439-1449* 

## Hydrodynamics

- A Maneuvering Model for an Underwater Vehicle Near a Free Surface—Part I: Motion Without Memory Effects. *Battista, T., +, JOE Jan. 2020 212-226* Computational Fluid Dynamics Prediction of the Dynamic Behavior of
- Autonomous Underwater Vehicles. Liu, Y., +, JOE July 2020 724-739
- Development of a Hybrid Simulator for Underwater Vehicles With Manipulators. *Razzanelli, M.*, +, *JOE Oct. 2020 1235-1251*
- Estimation of AUV Hydrodynamic Coefficients Using Analytical and System Identification Approaches. Cardenas, P., +, JOE Oct. 2020 1157-1176
- Hydrodynamic Parameter Estimation for Autonomous Underwater Vehicles. Gibson, S.B., +, JOE April 2020 385-394
- Hydrodynamic Shape Optimization of an Autonomous Underwater Vehicle With an Integrated Lifting Line and Viscous Continuous Adjoint Approach. *Wu, S.*, +, *JOE July 2020 851-861*
- Numerical Modeling of the Mooring System Failure of an Aquaculture Net Cage System Under Waves and Currents. *Yang, R.*, +, *JOE Oct. 2020 1396-1410*
- Simulation-Driven Optimization of Underwater Docking Station Design. Page, B.R., +, JOE April 2020 404-413

## Hydrophones

- Estimation of the Geoacoustic Properties of the New England Mud Patch From the Vertical Coherence of the Ambient Noise in the Water Column. *Barclay, D.R.*, +, *JOE Jan. 2020 51-59*
- Geoacoustic Inversion for a New England Mud Patch Sediment Using the Silt-Suspension Theory of Marine Mud. *Brown, E.M.*, +, *JOE Jan. 2020* 144-160
- Information Content of Ship Noise on a Drifting Volumetric Array for Passive Environmental Sensing. *Kubicko, J.S.*, +, *JOE April 2020 607-630*
- Short-Range Signatures of Explosive Sounds in Shallow Water Used for Seabed Characterization. *Wilson, P.S.,* +, *JOE Jan. 2020 14-25*
- Waveguide-Invariant-Based Ranging and Receiver Localization Using Tonal Sources of Opportunity. Young, A.H., +, JOE April 2020 631-644

## I

## Ice

Ice Condition Assessment Using Onboard Accelerometers and Statistical Change Detection. *Heyn*, *H.*, +, *JOE July 2020 898-914* 

## IEEE publishing

- 2019 List of Reviewers. JOE April 2020 680-682
- Excellence in Review 2019. *Chitre, M., JOE April 2020 347-349* Image classification
  - Manifold-Based Classification of Underwater Unexploded Ordnance in Low-Frequency Sonar. *Klausner*, *N.H.*, +, *JOE July 2020 1034-1044*
  - Performance Prediction and Estimation for Underwater Target Detection Using Multichannel Sonar. *Klausner, N.H.*, +, *JOE April 2020 534-546*

## Image coding

An Optical Image Transmission System for Deep Sea Creature Sampling Missions Using Autonomous Underwater Vehicle. *Ahn, J.*, +, *JOE April* 2020 350-361

#### Image color analysis

- An Optical Image Transmission System for Deep Sea Creature Sampling Missions Using Autonomous Underwater Vehicle. *Ahn, J.*, +, *JOE April* 2020 350-361
- Development of an Efficient Coral-Coverage Estimation Method Using a Towed Optical Camera Array System [Speedy Sea Scanner (SSS)] and Deep-Learning-Based Segmentation: A Sea Trial at the Kujuku-Shima Islands. *Mizuno, K.*, +, *JOE Oct. 2020 1386-1395*
- Offshore Underwater Image Restoration Using Reflection-Decomposition-Based Transmission Map Estimation. Yang, M., +, JOE April 2020 521-533
- Underwater Image Enhancement Using a Multiscale Dense Generative Adversarial Network. *Guo*, Y., +, *JOE July 2020 862-870*

## Image denoising

Underwater Image Enhancement Using a Multiscale Dense Generative Adversarial Network. *Guo, Y., +, JOE July 2020 862-870* 

#### Image enhancement

An Optical Image Transmission System for Deep Sea Creature Sampling Missions Using Autonomous Underwater Vehicle. Ahn, J., +, JOE April 2020 350-361

## 2020 350-361 Underwater Image Enhancement Using a Multiscale Dense Generative

Adversarial Network. Guo, Y., +, JOE July 2020 862-870

#### Image quality

# Interpolation Kernels for Synthetic Aperture Sonar Along-Track Motion Estimation. Brown, D.C., +, JOE Oct. 2020 1497-1505

#### Image reconstruction

- An Optical Image Transmission System for Deep Sea Creature Sampling Missions Using Autonomous Underwater Vehicle. *Ahn, J.*, +, *JOE April* 2020 350-361
- Application of Forward-Scan Sonar Stereo for 3-D Scene Reconstruction. Negahdaripour, S., JOE April 2020 547-562
- Omnidirectional Multicamera Video Stitching Using Depth Maps. Bosch, J., +, JOE Oct. 2020 1337-1352

## Image registration

Application of Forward-Scan Sonar Stereo for 3-D Scene Reconstruction. Negahdaripour, S., JOE April 2020 547-562 Synthetic Aperture Sonar Track Registration With Motion Compensation for Coherent Change Detection. *Myers, V.*, +, *JOE July 2020 1045-1062* 

## Image restoration

Offshore Underwater Image Restoration Using Reflection-Decomposition-Based Transmission Map Estimation. *Yang, M.*, +, *JOE April 2020* 521-533

## Image sampling

An Optical Image Transmission System for Deep Sea Creature Sampling Missions Using Autonomous Underwater Vehicle. *Ahn, J.*, +, *JOE April* 2020 350-361

## Image segmentation

Obstacle Tracking for Unmanned Surface Vessels Using 3-D Point Cloud. Muhovic, J., +, JOE July 2020 786-798

## Image sensors

- Application of Forward-Scan Sonar Stereo for 3-D Scene Reconstruction. Negahdaripour, S., JOE April 2020 547-562
- Visual Docking Against Bubble Noise With 3-D Perception Using Dual-Eye Cameras. Lwin, K.N., +, JOE Jan. 2020 247-270

#### Image stitching

Omnidirectional Multicamera Video Stitching Using Depth Maps. Bosch, J., +, JOE Oct. 2020 1337-1352

## Inductive power transmission

Improving Steady and Starting Characteristics of Wireless Charging for an AUV Docking System. *Yang, C.*, +, *JOE April 2020 430-441* 

## **Inertial navigation**

Differential Pressure Sensor Speedometer for Autonomous Underwater Vehicle Velocity Estimation. *Meurer, C.,* +, *JOE July 2020 946-978* 

## Interferometry

Synthetic Aperture Sonar Track Registration With Motion Compensation for Coherent Change Detection. *Myers*, V., +, *JOE July 2020 1045-1062* 

## **Inverse problems**

Geoacoustic Inversion Using an Autonomous Underwater Vehicle in Conjunction With Distributed Sensors. Zheng, Z., +, JOE Jan. 2020 319-341

- Guest Editorial An Overview of the Seabed Characterization Experiment. Wilson, P.S., +, JOE Jan. 2020 1-13
- Linearized Bayesian Inversion for Experiment Geometry at the New England Mud Patch. *Belcourt, J.*, +, *JOE Jan. 2020 60-68*
- Ship-of-Opportunity Noise Inversions for Geoacoustic Profiles of a Layered Mud-Sand Seabed. *Tollefsen, D.*, +, *JOE Jan. 2020 189-200*

Trans-Dimensional Inversion of Modal Dispersion Data on the New England Mud Patch. *Bonnel, J.*, +, *JOE Jan. 2020 116-130* 

## **Iterative methods**

- Application of Forward-Scan Sonar Stereo for 3-D Scene Reconstruction. Negahdaripour, S., JOE April 2020 547-562
- Distributed Convex Optimization Compressed Sensing Method for Sparse Planar Array Synthesis in 3-D Imaging Sonar Systems. *Gu, B.*, +, *JOE July 2020 1022-1033*
- Efficient Estimation and Prediction for Sparse Time-Varying Underwater Acoustic Channels. *Zhang, Y.*, +, *JOE July 2020 1112-1125*
- Frequency–Time Domain Turbo Equalization for Underwater Acoustic Communications. Xi, J., +, JOE April 2020 665-679
- Support-Constrained Mixed-Norm Optimization Techniques for Estimating Multipath Activity in Shallow Water Acoustic Channels. *McCarthy, R.A.*, +, *JOE July 2020 683-698*

#### J

## Jamming

Reinforcement-Learning-Based Relay Mobility and Power Allocation for Underwater Sensor Networks Against Jamming. Xiao, L., +, JOE July 2020 1148-1156

Κ

## Kalman filters

- An Adaptive EKF-FMPC for the Trajectory Tracking of UVMS. *Dai*, Y, +, *JOE July 2020 699-713*
- Asynchronous Localization of Underwater Target Using Consensus-Based Unscented Kalman Filtering. Yan, J., +, JOE Oct. 2020 1466-1481

Underwater Position and Attitude Estimation Using Acoustic, Inertial, and Depth Measurements. *Jorgensen, E.K.*, +, *JOE Oct. 2020 1450-1465* 

## Karhunen-Loeve transforms

Adaptive Modeling and Compression of Bathymetric Data With Variable Density. *Maleika, W.*, +, *JOE Oct. 2020 1353-1369* 

## Kernel

Interpolation Kernels for Synthetic Aperture Sonar Along-Track Motion Estimation. Brown, D.C., +, JOE Oct. 2020 1497-1505

L

## Learning (artificial intelligence)

- Global Exponential Tracking Control for an Autonomous Surface Vessel: An Integral Concurrent Learning Approach. *Bell, Z.I.*, +, *JOE April 2020* 362-370
- Ice Condition Assessment Using Onboard Accelerometers and Statistical Change Detection. *Heyn, H.,* +, *JOE July 2020 898-914*
- Manifold-Based Classification of Underwater Unexploded Ordnance in Low-Frequency Sonar. *Klausner*, *N.H.*, +, *JOE July 2020 1034-1044*
- Reinforcement-Learning-Based Relay Mobility and Power Allocation for Underwater Sensor Networks Against Jamming. Xiao, L., +, JOE July 2020 1148-1156
- Underwater Image Enhancement Using a Multiscale Dense Generative Adversarial Network. *Guo, Y., +, JOE July 2020 862-870*

## Least squares approximations

Efficient Estimation and Prediction for Sparse Time-Varying Underwater Acoustic Channels. Zhang, Y, +, JOE July 2020 1112-1125

## Light emitting diodes

Silicon-Photomultiplier-Based Underwater Wireless Optical Communication Using Pulse-Amplitude Modulation. *Khalighi, M.A.*, +, *JOE Oct.* 2020 1611-1621

## Light refraction

Underwater Laser Triangulation Sensor Model With Flat Refractive Interfaces. *Matos, G.*, +, *JOE July 2020 937-945* 

## Lighting

Offshore Underwater Image Restoration Using Reflection-Decomposition-Based Transmission Map Estimation. Yang, M., +, JOE April 2020 521-533

## Linear antenna arrays

Closed-Form Estimation of Normal Modes From a Partially Sampled Water Column. Gazzah, H., +, JOE Oct. 2020 1574-1582

## Linear quadratic control

Theoretical and Experimental Investigations on the Design of a Hybrid Depth Controller for a Standalone Variable Buoyancy System—vBuoy. Ranganathan, T., +, JOE April 2020 414-429

## Linearization techniques

Redefined Output Model-Free Adaptive Control Method and Unmanned Surface Vehicle Heading Control. *Liao*, Y, +, *JOE July 2020 714-723* 

## Low-power electronics

Design, Characterization, and Test of a Versatile Single-Mode Power-Over-Fiber and Communication System for Seafloor Observatories. *Diouf, C.*, +, *JOE April 2020 656-664* 

## Lyapunov methods

- An Adaptive EKF-FMPC for the Trajectory Tracking of UVMS. *Dai*, Y, +, *JOE July 2020 699-713*
- Global Exponential Tracking Control for an Autonomous Surface Vessel: An Integral Concurrent Learning Approach. *Bell, Z.I.*, +, *JOE April 2020* 362-370
- Global Robust Adaptive Trajectory Tracking Control for Surface Ships Under Input Saturation. Zhu, G., +, JOE April 2020 442-450

## М

## Manipulator dynamics

Development of a Hybrid Simulator for Underwater Vehicles With Manipulators. *Razzanelli, M.*, +, *JOE Oct. 2020 1235-1251* 

#### Manipulators

An Adaptive EKF-FMPC for the Trajectory Tracking of UVMS. *Dai*, Y, +, *JOE July 2020 699-713* 

#### Marine communication

Design, Characterization, and Test of a Versatile Single-Mode Power-Over-Fiber and Communication System for Seafloor Observatories. *Diouf, C.*, +, *JOE April 2020 656-664* 

## Marine control

Realizing Efficient Front Crawl Stroke With a Wheel-Paddle-Integrated Mechanism: Inspired by Human Competitive Swimming. *Shen, Y.*, +, *JOE July 2020 831-839* 

## Marine engineering

Underwater Acoustic Source Seeking Using Time-Difference-of-Arrival Measurements. *Mandic, F.*, +, *JOE July 2020 759-771* 

## Marine radar

- Evaluation of Alternative Direction-of-Arrival Methods for Oceanographic HF Radars. *Emery, B.M., JOE July 2020 990-1003*
- Nonlinear Extraction of Directional Ocean Wave Spectrum From Synthetic Bistatic High-Frequency Surface Wave Radar Data. *Silva, M.T.*, +, *JOE July 2020 1004-1021*

#### Marine robots

An Adaptive EKF-FMPC for the Trajectory Tracking of UVMS. *Dai*, Y, +, JOE July 2020 699-713

## Marine vehicles

- Global Exponential Tracking Control for an Autonomous Surface Vessel: An Integral Concurrent Learning Approach. *Bell, Z.I.*, +, *JOE April 2020* 362-370
- Line-of-Sight-Based Guidance and Adaptive Neural Path-Following Control for Sailboats. *Deng, Y.*, +, *JOE Oct. 2020 1177-1189*
- Long-Distance Path Planning for Unmanned Surface Vehicles in Complex Marine Environment. Shah, B.C., +, JOE July 2020 813-830

Redefined Output Model-Free Adaptive Control Method and Unmanned Surface Vehicle Heading Control. *Liao*, Y, +, *JOE July 2020 714-723* 

Toward Time-Optimal Trajectory Planning for Autonomous Ship Maneuvering in Close-Range Encounters. Li, G., +, JOE Oct. 2020 1219-1234

## Mathematical analysis

Underwater Laser Triangulation Sensor Model With Flat Refractive Interfaces. Matos, G., +, JOE July 2020 937-945

## Mathematical model

- Closed-Form Estimation of Normal Modes From a Partially Sampled Water Column. Gazzah, H., +, JOE Oct. 2020 1574-1582
- Development of a Hybrid Simulator for Underwater Vehicles With Manipulators. Razzanelli, M., +, JOE Oct. 2020 1235-1251
- Estimation of AUV Hydrodynamic Coefficients Using Analytical and System Identification Approaches. Cardenas, P., +, JOE Oct. 2020 1157-1176
- Investigation on Stochastic Model Refinement for Precise Underwater Positioning. Zhao, S., +, JOE Oct. 2020 1482-1496
- Line-of-Sight-Based Guidance and Adaptive Neural Path-Following Control for Sailboats. *Deng, Y.*, +, *JOE Oct. 2020 1177-1189*
- Matched Field Processing in Phase Space. Virovlyansky, A.L., +, JOE Oct. 2020 1583-1593
- Numerical and Experimental Investigation of Supercavitating Flow Development Over Different Nose Shape Projectiles. *Mansour, M.Y.*, +, *JOE Oct.* 2020 1370-1385
- Numerical Modeling of the Mooring System Failure of an Aquaculture Net Cage System Under Waves and Currents. *Yang, R.*, +, *JOE Oct. 2020 1396-1410*

#### Matrix inversion

Unit Circle Rectification of the Minimum Variance Distortionless Response Beamformer. *Tuladhar, S.R.*, +, *JOE April 2020 500-510* 

#### Maximum entropy methods

Maximum Entropy Derived Statistics of Sound-Speed Structure in a Fine-Grained Sediment Inferred From Sparse Broadband Acoustic Measurements on the New England Continental Shelf. *Knobles, D.P.*, +, *JOE Jan.* 2020 161-173

## Maximum likelihood estimation

- Broadband Waveform Geoacoustic Inversions With Absolute Travel Time. Lin, Y., +, JOE Jan. 2020 174-188
- Evaluation of Alternative Direction-of-Arrival Methods for Oceanographic HF Radars. *Emery, B.M., JOE July 2020 990-1003*

Improved Active Sonar Tracking in Clutter Using Integrated Feature Data. Mellema, G.R., JOE Jan. 2020 304-318

Localizing Sources Using a Network of Asynchronous Compact Arrays. Urazghildiiev, I.R., +, JOE July 2020 1091-1098

Waveguide-Invariant-Based Ranging and Receiver Localization Using Tonal Sources of Opportunity. Young, A.H., +, JOE April 2020 631-644

#### Mean square error methods

Support-Constrained Mixed-Norm Optimization Techniques for Estimating Multipath Activity in Shallow Water Acoustic Channels. *McCarthy, R.A.*, +, *JOE July 2020 683-698* 

#### Measurement by laser beam

Underwater Laser Triangulation Sensor Model With Flat Refractive Interfaces. Matos, G., +, JOE July 2020 937-945

## Measurement uncertainty

Underwater Acoustical Localization of the Black Box Utilizing Single Autonomous Underwater Vehicle Based on the Second-Order Time Difference of Arrival. Sun, S., +, JOE Oct. 2020 1268-1279

## Microcontrollers

Design, Characterization, and Test of a Versatile Single-Mode Power-Over-Fiber and Communication System for Seafloor Observatories. *Diouf, C.*, +, *JOE April 2020 656-664* 

## Microorganisms

Autonomous Tracking and Sampling of the Deep Chlorophyll Maximum Layer in an Open-Ocean Eddy by a Long-Range Autonomous Underwater Vehicle. *Zhang, Y.*, +, *JOE Oct. 2020 1308-1321* 

## MIMO communication

- On the Achievable Rate of Multiple-Input–Multiple-Output Underwater Acoustic Communications. *Bouvet*, P., +, JOE July 2020 1126-1137
- Sparse Direct Adaptive Equalization for Single-Carrier MIMO Underwater Acoustic Communications. Tao, J., +, JOE Oct. 2020 1622-1631
- Underwater Acoustic Communication Using Multiple-Input–Multiple-Output Doppler-Resilient Orthogonal Signal Division Multiplexing. *Ebihara*, *T.*, +, *JOE Oct. 2020 1594-1610*

## **MIMO** systems

An Adaptive EKF-FMPC for the Trajectory Tracking of UVMS. *Dai*, Y, +, *JOE July 2020 699-713* 

## Minerals

Geoacoustic Inversion for a New England Mud Patch Sediment Using the Silt-Suspension Theory of Marine Mud. *Brown, E.M.*, +, *JOE Jan. 2020* 144-160

## Mobile robots

- Autonomous Underwater Vehicle Homing With a Single Range-Only Beacon. Keane, J.R., +, JOE April 2020 395-403
- Differential Pressure Sensor Speedometer for Autonomous Underwater Vehicle Velocity Estimation. *Meurer, C., +, JOE July 2020 946-978*
- Dynamic Modeling of Passively Draining Structures for Aerial–Aquatic Unmanned Vehicles. *Stewart, W.*, +, *JOE July 2020 840-850*
- Global Exponential Tracking Control for an Autonomous Surface Vessel: An Integral Concurrent Learning Approach. *Bell, Z.I.*, +, *JOE April 2020* 362-370
- Long-Distance Path Planning for Unmanned Surface Vehicles in Complex Marine Environment. Shah, B.C., +, JOE July 2020 813-830
- Obstacle Tracking for Unmanned Surface Vessels Using 3-D Point Cloud. Muhovic, J., +, JOE July 2020 786-798
- Realizing Efficient Front Crawl Stroke With a Wheel-Paddle-Integrated Mechanism: Inspired by Human Competitive Swimming. *Shen, Y.*, +, *JOE July 2020 831-839*
- Redefined Output Model-Free Adaptive Control Method and Unmanned Surface Vehicle Heading Control. *Liao*, Y, +, *JOE July 2020 714-723*
- Simulation-Driven Optimization of Underwater Docking Station Design. Page, B.R., +, JOE April 2020 404-413
- Station-Keeping Underwater Gliders Using a Predictive Ocean Circulation Model and Applications to SWOT Calibration and Validation. *Clark, E.B.*, +, *JOE April 2020 371-384*
- Underwater Acoustic Source Seeking Using Time-Difference-of-Arrival Measurements. Mandic, F., +, JOE July 2020 759-771

Visual Docking Against Bubble Noise With 3-D Perception Using Dual-Eye Cameras. Lwin, K.N., +, JOE Jan. 2020 247-270

## Mobility management (mobile radio)

Reinforcement-Learning-Based Relay Mobility and Power Allocation for Underwater Sensor Networks Against Jamming. Xiao, L., +, JOE July 2020 1148-1156

## Model reference adaptive control systems

Experimental Comparison of Two Composite MRAC Methods for UUV Operations With Low Adaptation Gains. *Makavita, C.D.*, +, *JOE Jan. 2020* 227-246

## Modeling

Predicting False Alarm Rates for High-Resolution Antisubmarine Warfare Sonars in a Cluttering Environment Prone to False Alarm Rate Inflation. *Hjelmervik, K.T.*, +, *JOE Oct. 2020 1527-1537* 

## Monitoring

- Designated Area Persistent Monitoring Strategies for Hybrid Underwater Profilers. Zhou, P., +, JOE Oct. 2020 1322-1336
- Development of an Efficient Coral-Coverage Estimation Method Using a Towed Optical Camera Array System [Speedy Sea Scanner (SSS)] and Deep-Learning-Based Segmentation: A Sea Trial at the Kujuku-Shima Islands. *Mizuno, K.*, +, *JOE Oct. 2020 1386-1395*

## **Monte Carlo methods**

- A Neural-Network-Based Sensitivity Analysis Approach for Data-Driven Modeling of Ship Motion. *Cheng, X., +, JOE April 2020 451-461*
- Approximate Solutions for Surface Reflection Loss Inclusive of a Practical Model of Refraction in the Wind-Driven Bubbly Layer. *Jones, A.D.*, +, *JOE April 2020 586-606*
- Linearized Bayesian Inversion for Experiment Geometry at the New England Mud Patch. *Belcourt, J.*, +, *JOE Jan. 2020 60-68*

## Motion control

- Hydrodynamic Parameter Estimation for Autonomous Underwater Vehicles. Gibson, S.B., +, JOE April 2020 385-394
- Realizing Efficient Front Crawl Stroke With a Wheel-Paddle-Integrated Mechanism: Inspired by Human Competitive Swimming. *Shen, Y.*, +, *JOE July 2020 831-839*

## Motion estimation

Interpolation Kernels for Synthetic Aperture Sonar Along-Track Motion Estimation. Brown, D.C., +, JOE Oct. 2020 1497-1505

## Multi-robot systems

Simulation-Driven Optimization of Underwater Docking Station Design. Page, B.R., +, JOE April 2020 404-413

#### Multipath channels

- On the Achievable Rate of Multiple-Input–Multiple-Output Underwater Acoustic Communications. *Bouvet, P.*, +, *JOE July 2020 1126-1137*
- Support-Constrained Mixed-Norm Optimization Techniques for Estimating Multipath Activity in Shallow Water Acoustic Channels. *McCarthy, R.A.*, +, *JOE July 2020 683-698*

## Ν

## **Navier-Stokes equations**

Hydrodynamic Shape Optimization of an Autonomous Underwater Vehicle With an Integrated Lifting Line and Viscous Continuous Adjoint Approach. *Wu, S.*, +, *JOE July 2020 851-861* 

## Navigation

Line-of-Sight-Based Guidance and Adaptive Neural Path-Following Control for Sailboats. *Deng, Y.*, +, *JOE Oct. 2020 1177-1189* 

## Network architecture

Asynchronous Localization of Underwater Target Using Consensus-Based Unscented Kalman Filtering. Yan, J., +, JOE Oct. 2020 1466-1481

#### Neural networks

A Neural-Network-Based Sensitivity Analysis Approach for Data-Driven Modeling of Ship Motion. *Cheng, X.*, +, *JOE April 2020 451-461* 

Underwater Image Enhancement Using a Multiscale Dense Generative Adversarial Network. *Guo, Y., +, JOE July 2020 862-870* 

#### Noise measurement

Performance of a Passive Acoustic Linear Array in a Tidal Channel. Auvinen, M.F., +, JOE Oct. 2020 1564-1573

## Nonlinear control

Observation-Based Nonlinear Proportional–Derivative Control for Robust Trajectory Tracking for Autonomous Underwater Vehicles. *Guerrero, J.*, +, *JOE Oct. 2020 1190-1202* 

## Nonlinear control systems

- Adaptive Dynamic Surface Control for a Hybrid Aerial Underwater Vehicle With Parametric Dynamics and Uncertainties. *Lu, D.*, +, *JOE July 2020* 740-758
- Global Robust Adaptive Trajectory Tracking Control for Surface Ships Under Input Saturation. Zhu, G., +, JOE April 2020 442-450
- Nonlinear Model Predictive Control Applied to an Autonomous Underwater Vehicle. Saback, R.M., +, JOE July 2020 799-812
- Theoretical and Experimental Investigations on the Design of a Hybrid Depth Controller for a Standalone Variable Buoyancy System—vBuoy. Ranganathan, T., +, JOE April 2020 414-429

## **Nonlinear equations**

A Maneuvering Model for an Underwater Vehicle Near a Free Surface—Part I: Motion Without Memory Effects. *Battista, T., +, JOE Jan. 2020 212-226* **Nonlinear filters** 

An Adaptive EKF-FMPC for the Trajectory Tracking of UVMS. *Dai*, Y, +, *JOE July 2020 699-713* 

## Numerical analysis

- Buoy Analysis in a Point-Absorber Wave Energy Converter. Ruezga, A., +, JOE April 2020 472-479
- Numerical and Experimental Study of Wave Propagation in Water-Saturated Granular Media Using Effective Method Theories and a Full-Wave Numerical Simulation. *Mizuno, K.*, +, *JOE July 2020 772-785*

## Numerical models

Design of a Miniature Underwater Angle-of-Attack Sensor and Its Application to a Self-Propelled Robotic Fish. Yu, J., +, JOE Oct. 2020 1295-1307 Matched Field Processing in Phase Space. Virovlyansky, A.L., +, JOE Oct. 2020 1583-1593

Numerical Modeling of the Mooring System Failure of an Aquaculture Net Cage System Under Waves and Currents. *Yang, R., +, JOE Oct. 2020 1396-1410* 

#### Numerical simulation

Numerical and Experimental Investigation of Supercavitating Flow Development Over Different Nose Shape Projectiles. *Mansour, M.Y.*, +, *JOE Oct.* 2020 1370-1385

0

#### **Object detection**

- High-Resolution Power Spectral Estimation Method Using Deconvolution. Guo, W., +, JOE April 2020 489-499
- Obstacle Tracking for Unmanned Surface Vessels Using 3-D Point Cloud. Muhovic, J., +, JOE July 2020 786-798

Performance Prediction and Estimation for Underwater Target Detection Using Multichannel Sonar. Klausner, N.H., +, JOE April 2020 534-546

## Object tracking

Improved Active Sonar Tracking in Clutter Using Integrated Feature Data. Mellema, G.R., JOE Jan. 2020 304-318

#### Observability

Non-Gaussian Estimation of a Potential Flow by an Actuated Lagrangian Sensor Steered to Separating Boundaries by Augmented Observability. *Lagor, F.D., +, JOE Oct. 2020 1203-1218* 

#### Observers

Underwater Position and Attitude Estimation Using Acoustic, Inertial, and Depth Measurements. *Jorgensen, E.K.*, +, *JOE Oct. 2020 1450-1465* Ocean circulation

#### Ocean circulation

Detection of Oceanographic Fronts on Variable Water Depths Using Empirical Orthogonal Functions. *Hjelmervik, K.B.*, +, *JOE July 2020 915-926* 

## Ocean temperature

- Detection of Oceanographic Fronts on Variable Water Depths Using Empirical Orthogonal Functions. *Hjelmervik, K.B.*, +, *JOE July 2020 915-926*
- Diurnal Fluctuation of Shallow-Water Acoustic Propagation in the Cold Dome Off Northeastern Taiwan in Spring. *Chen, C.*, +, *JOE July 2020* 1099-1111

#### Ocean waves

- A Study on the Effects of Wave Spectra on Wave Energy Conversions. Prendergast, J., +, JOE Jan. 2020 271-283
- Breaking Wave Imaging Using Lidar and Sonar. Bryan, O., +, JOE July 2020 887-897
- Long-Term Estimation of Wave Climate Variability in the Western Bay of Bengal. Sadhukhan, B., +, JOE July 2020 871-886
- Nonlinear Extraction of Directional Ocean Wave Spectrum From Synthetic Bistatic High-Frequency Surface Wave Radar Data. *Silva, M.T.*, +, *JOE July 2020 1004-1021*
- Seafloor Burial of Surrogate Unexploded Ordnance by Wave-Induced Sediment Instability. *Klammler, H., +, JOE July 2020 927-936*
- Short-Term Forecasting of Sea Surface Elevation for Wave Energy Applications: The Autoregressive Model Revisited. *Pena-Sanchez, Y.*, +, *JOE April 2020 462-471*
- Smart Surrogate Munitions for Nearshore Unexploded Ordnance Mobility/ Burial Studies. *Bruder*, *B.*, +, *JOE Jan. 2020 284-303*

## **Oceanographic equipment**

- Real-Time Offshore Coastal Acoustic Tomography Enabled With Mirror-Transpond Functionality. Chen, M., +, JOE April 2020 645-655
- Sizing Drop Weights for Deep Diving Submersibles Taking Into Account Nonuniform Seawater Density Profiles. *Thornton, B., JOE July 2020 979-989*
- Station-Keeping Underwater Gliders Using a Predictive Ocean Circulation Model and Applications to SWOT Calibration and Validation. *Clark, E.B.*, +, *JOE April 2020 371-384*

#### **Oceanographic regions**

- Detection of Oceanographic Fronts on Variable Water Depths Using Empirical Orthogonal Functions. *Hjelmervik, K.B.*, +, *JOE July 2020 915-926*
- Diurnal Fluctuation of Shallow-Water Acoustic Propagation in the Cold Dome Off Northeastern Taiwan in Spring. *Chen, C.*, +, *JOE July 2020* 1099-1111
- Information Content of Ship Noise on a Drifting Volumetric Array for Passive Environmental Sensing. Kubicko, J.S., +, JOE April 2020 607-630
- Long-Term Estimation of Wave Climate Variability in the Western Bay of Bengal. Sadhukhan, B., +, JOE July 2020 871-886
- Real-Time Offshore Coastal Acoustic Tomography Enabled With Mirror-Transpond Functionality. Chen, M., +, JOE April 2020 645-655
- Station-Keeping Underwater Gliders Using a Predictive Ocean Circulation Model and Applications to SWOT Calibration and Validation. *Clark, E.B.*, +, *JOE April 2020 371-384*

## Oceanographic techniques

- A No-Reference Video Quality Assessment Model for Underwater Networks. *Moreno-Roldan, J.*, +, *JOE Jan. 2020 342-346*
- An Optical Image Transmission System for Deep Sea Creature Sampling Missions Using Autonomous Underwater Vehicle. *Ahn, J.*, +, *JOE April* 2020 350-361
- Breaking Wave Imaging Using Lidar and Sonar. Bryan, O., +, JOE July 2020 887-897
- Depth-Dependent Geoacoustic Inferences With Dispersion at the New England Mud Patch via Reflection Coefficient Inversion. *Belcourt, J.*, +, *JOE Jan. 2020 69-91*
- Detection of Oceanographic Fronts on Variable Water Depths Using Empirical Orthogonal Functions. *Hjelmervik, K.B.*, +, *JOE July 2020 915-926*
- Effect of Shear on Modal Arrival Times. Potty, G.R., +, JOE Jan. 2020 103-115
- Estimation of the Geoacoustic Properties of the New England Mud Patch From the Vertical Coherence of the Ambient Noise in the Water Column. *Barclay, D.R.*, +, *JOE Jan. 2020 51-59*
- Evaluation of Alternative Direction-of-Arrival Methods for Oceanographic HF Radars. *Emery, B.M., JOE July 2020 990-1003*
- Geoacoustic Inversion for a New England Mud Patch Sediment Using the Silt-Suspension Theory of Marine Mud. *Brown, E.M.*, +, *JOE Jan. 2020* 144-160
- Geoacoustic Inversion Using an Autonomous Underwater Vehicle in Conjunction With Distributed Sensors. Zheng, Z., +, JOE Jan. 2020 319-341

- Guest Editorial An Overview of the Seabed Characterization Experiment. Wilson, P.S., +, JOE Jan. 2020 1-13
- Information Content of Ship Noise on a Drifting Volumetric Array for Passive Environmental Sensing. *Kubicko, J.S.*, +, *JOE April 2020 607-630*
- Linearized Bayesian Inversion for Experiment Geometry at the New England Mud Patch. *Belcourt, J.*, +, *JOE Jan. 2020 60-68*
- Long-Term Estimation of Wave Climate Variability in the Western Bay of Bengal. Sadhukhan, B., +, JOE July 2020 871-886
- Maximum Entropy Derived Statistics of Sound-Speed Structure in a Fine-Grained Sediment Inferred From Sparse Broadband Acoustic Measurements on the New England Continental Shelf. *Knobles, D.P.*, +, *JOE Jan.* 2020 161-173
- Multipath Broadband Localization, Bathymetry, and Sediment Inversion. Michalopoulou, Z., +, JOE Jan. 2020 92-102
- Nonlinear Extraction of Directional Ocean Wave Spectrum From Synthetic Bistatic High-Frequency Surface Wave Radar Data. *Silva, M.T.*, +, *JOE July 2020 1004-1021*
- Real-Time Offshore Coastal Acoustic Tomography Enabled With Mirror-Transpond Functionality. Chen, M., +, JOE April 2020 645-655
- Ship-of-Opportunity Noise Inversions for Geoacoustic Profiles of a Layered Mud-Sand Seabed. *Tollefsen*, D., +, JOE Jan. 2020 189-200
- Short-Term Forecasting of Sea Surface Elevation for Wave Energy Applications: The Autoregressive Model Revisited. *Pena-Sanchez, Y.*, +, *JOE April 2020 462-471*
- Sizing Drop Weights for Deep Diving Submersibles Taking Into Account Nonuniform Seawater Density Profiles. *Thornton, B., JOE July 2020 979-*989
- Station-Keeping Underwater Gliders Using a Predictive Ocean Circulation Model and Applications to SWOT Calibration and Validation. *Clark, E.B.*, +, *JOE April 2020 371-384*
- Synthetic Aperture Sonar Track Registration With Motion Compensation for Coherent Change Detection. *Myers*, V., +, *JOE July 2020 1045-1062*
- Trans-Dimensional Inversion of Modal Dispersion Data on the New England Mud Patch. *Bonnel*, J., +, JOE Jan. 2020 116-130
- Underwater Laser Triangulation Sensor Model With Flat Refractive Interfaces. Matos, G., +, JOE July 2020 937-945
- Waveguide-Invariant-Based Ranging and Receiver Localization Using Tonal Sources of Opportunity. Young, A.H., +, JOE April 2020 631-644

#### Oceanography

Numerical and Experimental Study of Wave Propagation in Water-Saturated Granular Media Using Effective Method Theories and a Full-Wave Numerical Simulation. *Mizuno, K.*, +, *JOE July 2020 772-785* 

## OFDM

Underwater Acoustic Communication Using Multiple-Input–Multiple-Output Doppler-Resilient Orthogonal Signal Division Multiplexing. *Ebihara*, *T.*, +, *JOE Oct.* 2020 1594-1610

## Optical arrays

Development of an Efficient Coral-Coverage Estimation Method Using a Towed Optical Camera Array System [Speedy Sea Scanner (SSS)] and Deep-Learning-Based Segmentation: A Sea Trial at the Kujuku-Shima Islands. *Mizuno, K.*, +, *JOE Oct. 2020 1386-1395* 

## Optical fiber communication

Silicon-Photomultiplier-Based Underwater Wireless Optical Communication Using Pulse-Amplitude Modulation. *Khalighi, M.A.*, +, *JOE Oct.* 2020 1611-1621

## **Optical fiber networks**

Design, Characterization, and Test of a Versatile Single-Mode Power-Over-Fiber and Communication System for Seafloor Observatories. *Diouf, C.*, +, *JOE April 2020 656-664* 

#### **Optical images**

Application of Forward-Scan Sonar Stereo for 3-D Scene Reconstruction. Negahdaripour, S., JOE April 2020 547-562

## Optical projectors

Underwater Laser Triangulation Sensor Model With Flat Refractive Interfaces. Matos, G., +, JOE July 2020 937-945

## **Optical radar**

Breaking Wave Imaging Using Lidar and Sonar. Bryan, O., +, JOE July 2020 887-897

## **Optical sensors**

Underwater Laser Triangulation Sensor Model With Flat Refractive Interfaces. *Matos, G.*, +, *JOE July 2020 937-945* 

**Optimal control** 

An Adaptive EKF-FMPC for the Trajectory Tracking of UVMS. *Dai*, Y, +, JOE July 2020 699-713

## Optimization

- Application of Forward-Scan Sonar Stereo for 3-D Scene Reconstruction. Negahdaripour, S., JOE April 2020 547-562
- Characterization of Piezoelectric Material Parameters Through a Global Optimization Algorithm. *Wild, M., +, JOE April 2020 480-488*
- Hydrodynamic Shape Optimization of an Autonomous Underwater Vehicle With an Integrated Lifting Line and Viscous Continuous Adjoint Approach. *Wu, S.*, +, *JOE July 2020 851-861*
- Simulation-Driven Optimization of Underwater Docking Station Design. Page, B.R., +, JOE April 2020 404-413
- Support-Constrained Mixed-Norm Optimization Techniques for Estimating Multipath Activity in Shallow Water Acoustic Channels. *McCarthy, R.A.*, +, *JOE July 2020 683-698*
- Toward Time-Optimal Trajectory Planning for Autonomous Ship Maneuvering in Close-Range Encounters. Li, G., +, JOE Oct. 2020 1219-1234

## Р

## Parameter estimation

- Estimation of AUV Hydrodynamic Coefficients Using Analytical and System Identification Approaches. *Cardenas, P.*, +, *JOE Oct. 2020 1157-1176* Hydrodynamic Parameter Estimation for Autonomous Underwater Vehicles. *Gibson, S.B.*, +, *JOE April 2020 385-394*
- Inverse Synthetic Aperture Sonar Imaging of Underwater Vehicles Utilizing 3-D Rotations. Sun, S., +, JOE April 2020 563-576
- Ship-of-Opportunity Noise Inversions for Geoacoustic Profiles of a Layered Mud-Sand Seabed. *Tollefsen, D.*, +, *JOE Jan. 2020 189-200*

## Path planning

- Long-Distance Path Planning for Unmanned Surface Vehicles in Complex Marine Environment. Shah, B.C., +, JOE July 2020 813-830
- Non-Gaussian Estimation of a Potential Flow by an Actuated Lagrangian Sensor Steered to Separating Boundaries by Augmented Observability. *Lagor, F.D.,* +, *JOE Oct. 2020 1203-1218*
- Toward Time-Optimal Trajectory Planning for Autonomous Ship Maneuvering in Close-Range Encounters. Li, G., +, JOE Oct. 2020 1219-1234

## Pattern classification

Ice Condition Assessment Using Onboard Accelerometers and Statistical Change Detection. *Heyn*, *H.*, +, *JOE July 2020 898-914* 

## PD control

Observation-Based Nonlinear Proportional–Derivative Control for Robust Trajectory Tracking for Autonomous Underwater Vehicles. *Guerrero, J.*, +, *JOE Oct. 2020 1190-1202* 

## Performance gain

Sparse Direct Adaptive Equalization for Single-Carrier MIMO Underwater Acoustic Communications. *Tao*, J., +, *JOE Oct. 2020 1622-1631* 

## **Perturbation methods**

Matched Field Processing in Phase Space. Virovlyansky, A.L., +, JOE Oct. 2020 1583-1593

## Phase shift keying

Frequency–Time Domain Turbo Equalization for Underwater Acoustic Communications. Xi, J., +, JOE April 2020 665-679

## Photomultipliers

Silicon-Photomultiplier-Based Underwater Wireless Optical Communication Using Pulse-Amplitude Modulation. *Khalighi, M.A.*, +, *JOE Oct.* 2020 1611-1621

## Photonics

Silicon-Photomultiplier-Based Underwater Wireless Optical Communication Using Pulse-Amplitude Modulation. *Khalighi, M.A.*, +, *JOE Oct.* 2020 1611-1621

## **Piezoelectric materials**

Characterization of Piezoelectric Material Parameters Through a Global Optimization Algorithm. *Wild, M.*, +, *JOE April 2020 480-488* 

#### Pipelines

Omnidirectional Multicamera Video Stitching Using Depth Maps. Bosch, J., +, JOE Oct. 2020 1337-1352

## Planar antenna arrays

Distributed Convex Optimization Compressed Sensing Method for Sparse Planar Array Synthesis in 3-D Imaging Sonar Systems. *Gu, B.*, +, *JOE July 2020 1022-1033* 

## Polynomials

- A Neural-Network-Based Sensitivity Analysis Approach for Data-Driven Modeling of Ship Motion. *Cheng, X., +, JOE April 2020 451-461*
- Unit Circle Rectification of the Minimum Variance Distortionless Response Beamformer. *Tuladhar, S.R.,* +, *JOE April 2020 500-510*

## Porosity

In Situ Measurements of Compressional Wave Speed During Gravity Coring Operations in the New England Mud Patch. Ballard, M.S., +, JOE Jan. 2020 26-38

## Position control

- Global Robust Adaptive Trajectory Tracking Control for Surface Ships Under Input Saturation. Zhu, G., +, JOE April 2020 442-450
- Theoretical and Experimental Investigations on the Design of a Hybrid Depth Controller for a Standalone Variable Buoyancy System—vBuoy. Ranganathan, T., +, JOE April 2020 414-429
- Visual Docking Against Bubble Noise With 3-D Perception Using Dual-Eye Cameras. Lwin, K.N., +, JOE Jan. 2020 247-270
- Waveguide-Invariant-Based Ranging and Receiver Localization Using Tonal Sources of Opportunity. Young, A.H., +, JOE April 2020 631-644

## **Position measurement**

- Non-Gaussian Estimation of a Potential Flow by an Actuated Lagrangian Sensor Steered to Separating Boundaries by Augmented Observability. *Lagor, F.D.,* +, *JOE Oct. 2020 1203-1218*
- Underwater Position and Attitude Estimation Using Acoustic, Inertial, and Depth Measurements. *Jorgensen, E.K.*, +, *JOE Oct. 2020 1450-1465*

#### Power consumption

Design, Characterization, and Test of a Versatile Single-Mode Power-Over-Fiber and Communication System for Seafloor Observatories. *Diouf, C.*, +, *JOE April 2020 656-664* 

## Power supplies to apparatus

## Predictive control

- An Adaptive EKF-FMPC for the Trajectory Tracking of UVMS. *Dai*, Y, +, *JOE July 2020 699-713*
- Nonlinear Model Predictive Control Applied to an Autonomous Underwater Vehicle. Saback, R.M., +, JOE July 2020 799-812

#### Pressure measurement

An Unsteady Pressure Probe for the Measurement of Flow Unsteadiness in Tidal Channels. Young, A.M., +, JOE Oct. 2020 1411-1426

#### Pressure sensors

Differential Pressure Sensor Speedometer for Autonomous Underwater Vehicle Velocity Estimation. *Meurer, C., +, JOE July 2020 946-978* 

Higher-Order-Statistics-Based Direction-of-Arrival Estimation of Multiple Wideband Sources With Single Acoustic Vector Sensor. *Agarwal, A.*, +, *JOE Oct. 2020 1439-1449* 

#### Probability

Broadband Waveform Geoacoustic Inversions With Absolute Travel Time. Lin, Y., +, JOE Jan. 2020 174-188

Correlation Detection of Boundaries in Sonar Applications With Repeated Codes. *Taudien, J.Y.*, +, *JOE July 2020 1078-1090* 

## Probes

An Unsteady Pressure Probe for the Measurement of Flow Unsteadiness in Tidal Channels. Young, A.M., +, JOE Oct. 2020 1411-1426

## Projectiles

Numerical and Experimental Investigation of Supercavitating Flow Development Over Different Nose Shape Projectiles. *Mansour, M.Y.*, +, *JOE Oct.* 2020 1370-1385

## Propellers

Computational Fluid Dynamics Prediction of the Dynamic Behavior of Autonomous Underwater Vehicles. *Liu*, *Y*, +, *JOE July 2020 724-739* 

- Hydrodynamic Shape Optimization of an Autonomous Underwater Vehicle With an Integrated Lifting Line and Viscous Continuous Adjoint Approach. *Wu, S.*, +, *JOE July 2020 851-861*
- Realizing Efficient Front Crawl Stroke With a Wheel-Paddle-Integrated Mechanism: Inspired by Human Competitive Swimming. *Shen, Y.*, +, *JOE July 2020 831-839*

## Propulsion

Design of a Miniature Underwater Angle-of-Attack Sensor and Its Application to a Self-Propelled Robotic Fish. Yu, J., +, JOE Oct. 2020 1295-1307
 Realizing Efficient Front Crawl Stroke With a Wheel-Paddle-Integrated Mechanism: Inspired by Human Competitive Swimming. Shen, Y., +, JOE July 2020 831-839

## Prototypes

Designated Area Persistent Monitoring Strategies for Hybrid Underwater Profilers. Zhou, P., +, JOE Oct. 2020 1322-1336

## Q

## Quadrature amplitude modulation

Frequency–Time Domain Turbo Equalization for Underwater Acoustic Communications. Xi, J., +, JOE April 2020 665-679

## Quadtrees

Long-Distance Path Planning for Unmanned Surface Vehicles in Complex Marine Environment. Shah, B.C., +, JOE July 2020 813-830

## Quantum cryptography

Assessing Feasibility of Secure Quantum Communications Involving Underwater Assets. Lanzagorta, M., +, JOE July 2020 1138-1147

## Quantum mechanics

Matched Field Processing in Phase Space. Virovlyansky, A.L., +, JOE Oct. 2020 1583-1593

#### R

#### Radar antennas

A Scheme for Multitarget Lateral Velocity Measurement With High-Frequency Monostatic Radar. Li, M., +, JOE Oct. 2020 1427-1438

#### Radar clutter

Improved Active Sonar Tracking in Clutter Using Integrated Feature Data. Mellema, G.R., JOE Jan. 2020 304-318

#### Radar signal processing

Evaluation of Alternative Direction-of-Arrival Methods for Oceanographic HF Radars. *Emery, B.M., JOE July 2020 990-1003* 

## Radar tracking

A Scheme for Multitarget Lateral Velocity Measurement With High-Frequency Monostatic Radar. Li, M., +, JOE Oct. 2020 1427-1438

## Radon transforms

Inverse Synthetic Aperture Sonar Imaging of Underwater Vehicles Utilizing 3-D Rotations. *Sun, S.*, +, *JOE April 2020 563-576* 

#### Raman spectra

Design, Characterization, and Test of a Versatile Single-Mode Power-Over-Fiber and Communication System for Seafloor Observatories. *Diouf, C.*, +, *JOE April 2020 656-664* 

## **Real-time systems**

Design of a Miniature Underwater Angle-of-Attack Sensor and Its Application to a Self-Propelled Robotic Fish. *Yu*, *J.*, +, *JOE Oct. 2020 1295-1307* 

## Relay networks (telecommunication)

Reinforcement-Learning-Based Relay Mobility and Power Allocation for Underwater Sensor Networks Against Jamming. Xiao, L., +, JOE July 2020 1148-1156

## **Remote sensing**

Maximum Entropy Derived Statistics of Sound-Speed Structure in a Fine-Grained Sediment Inferred From Sparse Broadband Acoustic Measurements on the New England Continental Shelf. *Knobles, D.P.*, +, *JOE Jan.* 2020 161-173

#### Remote sensing by radar

Evaluation of Alternative Direction-of-Arrival Methods for Oceanographic HF Radars. *Emery, B.M., JOE July 2020 990-1003* 

Improving Steady and Starting Characteristics of Wireless Charging for an AUV Docking System. Yang, C., +, JOE April 2020 430-441

#### **Remotely operated vehicles**

- Autonomous Underwater Vehicle Homing With a Single Range-Only Beacon. Keane, J.R., +, JOE April 2020 395-403
- Computational Fluid Dynamics Prediction of the Dynamic Behavior of Autonomous Underwater Vehicles. *Liu*, *Y*, +, *JOE July 2020 724-739*
- Dynamic Modeling of Passively Draining Structures for Aerial–Aquatic Unmanned Vehicles. *Stewart, W.*, +, *JOE July 2020 840-850*
- Geoacoustic Inversion Using an Autonomous Underwater Vehicle in Conjunction With Distributed Sensors. Zheng, Z., +, JOE Jan. 2020 319-341
- Global Exponential Tracking Control for an Autonomous Surface Vessel: An Integral Concurrent Learning Approach. *Bell, Z.I.*, +, *JOE April 2020* 362-370
- Hydrodynamic Shape Optimization of an Autonomous Underwater Vehicle With an Integrated Lifting Line and Viscous Continuous Adjoint Approach. *Wu, S.*, +, *JOE July 2020 851-861*
- Improving Steady and Starting Characteristics of Wireless Charging for an AUV Docking System. Yang, C., +, JOE April 2020 430-441
- Long-Distance Path Planning for Unmanned Surface Vehicles in Complex Marine Environment. Shah, B.C., +, JOE July 2020 813-830
- Obstacle Tracking for Unmanned Surface Vessels Using 3-D Point Cloud. Muhovic, J., +, JOE July 2020 786-798
- Redefined Output Model-Free Adaptive Control Method and Unmanned Surface Vehicle Heading Control. *Liao*, Y, +, *JOE July 2020 714-723*
- Simulation-Driven Optimization of Underwater Docking Station Design. Page, B.R., +, JOE April 2020 404-413
- Visual Docking Against Bubble Noise With 3-D Perception Using Dual-Eye Cameras. Lwin, K.N., +, JOE Jan. 2020 247-270

#### Reverberation

Predicting False Alarm Rates for High-Resolution Antisubmarine Warfare Sonars in a Cluttering Environment Prone to False Alarm Rate Inflation. *Hjelmervik, K.T.*, +, *JOE Oct. 2020 1527-1537* 

#### **Robot dynamics**

- Adaptive Dynamic Surface Control for a Hybrid Aerial Underwater Vehicle With Parametric Dynamics and Uncertainties. *Lu, D.*, +, *JOE July 2020* 740-758
- Realizing Efficient Front Crawl Stroke With a Wheel-Paddle-Integrated Mechanism: Inspired by Human Competitive Swimming. *Shen, Y.*, +, *JOE July 2020 831-839*

#### **Robot kinematics**

Realizing Efficient Front Crawl Stroke With a Wheel-Paddle-Integrated Mechanism: Inspired by Human Competitive Swimming. *Shen, Y.*, +, *JOE July 2020 831-839* 

## Robot sensing systems

- Design of a Miniature Underwater Angle-of-Attack Sensor and Its Application to a Self-Propelled Robotic Fish. *Yu, J.*, +, *JOE Oct. 2020 1295-1307* **Robot vision** 
  - An Optical Image Transmission System for Deep Sea Creature Sampling Missions Using Autonomous Underwater Vehicle. Ahn, J., +, JOE April 2020 350-361
  - Visual Docking Against Bubble Noise With 3-D Perception Using Dual-Eye Cameras. *Lwin, K.N.*, +, *JOE Jan. 2020 247-270*

## Robot vision systems

Omnidirectional Multicamera Video Stitching Using Depth Maps. Bosch, J., +, JOE Oct. 2020 1337-1352

## Robust control

- Adaptive Dynamic Surface Control for a Hybrid Aerial Underwater Vehicle With Parametric Dynamics and Uncertainties. *Lu, D.*, +, *JOE July 2020* 740-758
- An Adaptive EKF-FMPC for the Trajectory Tracking of UVMS. *Dai*, Y, +, *JOE July 2020 699-713*
- Global Robust Adaptive Trajectory Tracking Control for Surface Ships Under Input Saturation. Zhu, G., +, JOE April 2020 442-450
- Theoretical and Experimental Investigations on the Design of a Hybrid Depth Controller for a Standalone Variable Buoyancy System—vBuoy. Ranganathan, T., +, JOE April 2020 414-429

#### Robustness

Improving Swath Sonar Water Column Imagery and Bathymetry With Adaptive Beamforming. Birkenes Lonmo, T.I., +, JOE Oct. 2020 1552-1563 Salinity (geophysical) Detection of Oceanographic Fronts on Variable Water Depths Using Empirical Orthogonal Functions. *Hjelmervik, K.B.*, +, *JOE July 2020 915-926* 

#### Sampling methods

Autonomous Tracking and Sampling of the Deep Chlorophyll Maximum Layer in an Open-Ocean Eddy by a Long-Range Autonomous Underwater Vehicle. *Zhang, Y.*, +, *JOE Oct. 2020 1308-1321* 

#### Sand

Estimates of Low-Frequency Sound Speed and Attenuation in a Surface Mud Layer Using Low-Order Modes. *Wan, L., +, JOE Jan. 2020 201-211*Ship-of-Opportunity Noise Inversions for Geoacoustic Profiles of a Layered Mud-Sand Seabed. *Tollefsen, D., +, JOE Jan. 2020 189-200*

#### Sea floor

- Autonomous Landing of Underwater Vehicles Using High-Resolution Bathymetry. Sangekar, M.N., +, JOE Oct. 2020 1252-1267
- Data Processing Method of Multibeam Bathymetry Based on Sparse Weighted LS-SVM Machine Algorithm. *Huang, X.*, +, *JOE Oct. 2020* 1538-1551
- Improving Swath Sonar Water Column Imagery and Bathymetry With Adaptive Beamforming. *Birkenes Lonmo, T.I.*, +, *JOE Oct. 2020 1552-1563*

## Sea ice

- Ice Condition Assessment Using Onboard Accelerometers and Statistical Change Detection. *Heyn*, *H.*, +, *JOE July 2020 898-914*
- Sea measurements
  - Adaptive Modeling and Compression of Bathymetric Data With Variable Density. *Maleika, W.*, +, *JOE Oct. 2020 1353-1369*
  - An Unsteady Pressure Probe for the Measurement of Flow Unsteadiness in Tidal Channels. Young, A.M., +, JOE Oct. 2020 1411-1426
  - Matched Field Processing in Phase Space. Virovlyansky, A.L., +, JOE Oct. 2020 1583-1593
  - Non-Gaussian Estimation of a Potential Flow by an Actuated Lagrangian Sensor Steered to Separating Boundaries by Augmented Observability. *Lagor, F.D.,* +, *JOE Oct. 2020 1203-1218*
  - Performance of a Passive Acoustic Linear Array in a Tidal Channel. *Auvinen*, *M.F.*, +, *JOE Oct. 2020 1564-1573*
  - Underwater Position and Attitude Estimation Using Acoustic, Inertial, and Depth Measurements. *Jorgensen, E.K.*, +, *JOE Oct. 2020 1450-1465*
  - Utilizing Orthogonal Coprime Signals for Improving Broadband Acoustic Doppler Current Profilers. *Chi, C.,* +, *JOE Oct. 2020 1516-1526*

Sea surface

- Designated Area Persistent Monitoring Strategies for Hybrid Underwater Profilers. Zhou, P., +, JOE Oct. 2020 1322-1336
- Performance of a Passive Acoustic Linear Array in a Tidal Channel. *Auvinen*, *M.F.*, +, *JOE Oct. 2020 1564-1573*

#### Seafloor phenomena

- In Situ Measurements of Compressional Wave Speed During Gravity Coring Operations in the New England Mud Patch. Ballard, M.S., +, JOE Jan. 2020 26-38
- Estimation of the Geoacoustic Properties of the New England Mud Patch From the Vertical Coherence of the Ambient Noise in the Water Column. *Barclay, D.R.*, +, *JOE Jan. 2020 51-59*
- Maximum Entropy Derived Statistics of Sound-Speed Structure in a Fine-Grained Sediment Inferred From Sparse Broadband Acoustic Measurements on the New England Continental Shelf. *Knobles, D.P.*, +, *JOE Jan.* 2020 161-173
- Seafloor Burial of Surrogate Unexploded Ordnance by Wave-Induced Sediment Instability. *Klammler, H.*, +, *JOE July 2020 927-936*
- Vector Acoustic Analysis of Time-Separated Modal Arrivals From Explosive Sound Sources During the 2017 Seabed Characterization Experiment. *Dahl, P.H.*, +, *JOE Jan. 2020 131-143*

#### Search problems

Long-Distance Path Planning for Unmanned Surface Vehicles in Complex Marine Environment. Shah, B.C., +, JOE July 2020 813-830

#### Seawater

Sizing Drop Weights for Deep Diving Submersibles Taking Into Account Nonuniform Seawater Density Profiles. *Thornton, B., JOE July 2020 979-*989

## Sedimentation

- In Situ Measurements of Compressional Wave Speed During Gravity Coring Operations in the New England Mud Patch. Ballard, M.S., +, JOE Jan. 2020 26-38
- Estimates of Low-Frequency Sound Speed and Attenuation in a Surface Mud Layer Using Low-Order Modes. *Wan, L., +, JOE Jan. 2020 201-211*
- Measurement of Sound Speed in Fine-Grained Sediments During the Seabed Characterization Experiment. Yang, J., +, JOE Jan. 2020 39-50
- Seafloor Burial of Surrogate Unexploded Ordnance by Wave-Induced Sediment Instability. *Klammler, H., +, JOE July 2020 927-936*

## Sediments

- In Situ Measurements of Compressional Wave Speed During Gravity Coring Operations in the New England Mud Patch. Ballard, M.S., +, JOE Jan. 2020 26-38
- Broadband Waveform Geoacoustic Inversions With Absolute Travel Time. Lin, Y, +, JOE Jan. 2020 174-188
- Depth-Dependent Geoacoustic Inferences With Dispersion at the New England Mud Patch via Reflection Coefficient Inversion. *Belcourt*, J., +, JOE Jan. 2020 69-91
- Effect of Shear on Modal Arrival Times. Potty, G.R., +, JOE Jan. 2020 103-115
- Estimates of Low-Frequency Sound Speed and Attenuation in a Surface Mud Layer Using Low-Order Modes. Wan, L., +, JOE Jan. 2020 201-211
- Estimation of the Geoacoustic Properties of the New England Mud Patch From the Vertical Coherence of the Ambient Noise in the Water Column. *Barclay, D.R.*, +, *JOE Jan. 2020 51-59*
- Geoacoustic Inversion for a New England Mud Patch Sediment Using the Silt-Suspension Theory of Marine Mud. *Brown, E.M.*, +, *JOE Jan. 2020* 144-160
- Geoacoustic Inversion Using an Autonomous Underwater Vehicle in Conjunction With Distributed Sensors. Zheng, Z., +, JOE Jan. 2020 319-341
- Guest Editorial An Overview of the Seabed Characterization Experiment. Wilson, P.S., +, JOE Jan. 2020 1-13
- Linearized Bayesian Inversion for Experiment Geometry at the New England Mud Patch. *Belcourt, J.*, +, *JOE Jan. 2020 60-68*
- Maximum Entropy Derived Statistics of Sound-Speed Structure in a Fine-Grained Sediment Inferred From Sparse Broadband Acoustic Measurements on the New England Continental Shelf. *Knobles, D.P.*, +, *JOE Jan.* 2020 161-173
- Measurement of Sound Speed in Fine-Grained Sediments During the Seabed Characterization Experiment. Yang, J., +, JOE Jan. 2020 39-50
- Multipath Broadband Localization, Bathymetry, and Sediment Inversion. Michalopoulou, Z., +, JOE Jan. 2020 92-102
- Numerical and Experimental Study of Wave Propagation in Water-Saturated Granular Media Using Effective Method Theories and a Full-Wave Numerical Simulation. *Mizuno, K.*, +, *JOE July 2020 772-785*
- Seafloor Burial of Surrogate Unexploded Ordnance by Wave-Induced Sediment Instability. *Klammler, H.*, +, *JOE July 2020 927-936*
- Ship-of-Opportunity Noise Inversions for Geoacoustic Profiles of a Layered Mud-Sand Seabed. *Tollefsen*, D., +, JOE Jan. 2020 189-200
- Short-Range Signatures of Explosive Sounds in Shallow Water Used for Seabed Characterization. *Wilson, P.S.*, +, *JOE Jan. 2020 14-25*
- Smart Surrogate Munitions for Nearshore Unexploded Ordnance Mobility/ Burial Studies. Bruder, B., +, JOE Jan. 2020 284-303
- Trans-Dimensional Inversion of Modal Dispersion Data on the New England Mud Patch. *Bonnel*, J., +, JOE Jan. 2020 116-130
- Vector Acoustic Analysis of Time-Separated Modal Arrivals From Explosive Sound Sources During the 2017 Seabed Characterization Experiment. Dahl, P.H., +, JOE Jan. 2020 131-143

## Sensitivity

Matched Field Processing in Phase Space. Virovlyansky, A.L., +, JOE Oct. 2020 1583-1593

#### Sensitivity analysis

A Neural-Network-Based Sensitivity Analysis Approach for Data-Driven Modeling of Ship Motion. *Cheng, X.*, +, *JOE April 2020 451-461* 

## Sensor arrays

- Higher-Order-Statistics-Based Direction-of-Arrival Estimation of Multiple Wideband Sources With Single Acoustic Vector Sensor. *Agarwal, A.*, +, *JOE Oct. 2020 1439-1449*
- Underwater Acoustic Source Seeking Using Time-Difference-of-Arrival Measurements. *Mandic, F.*, +, *JOE July 2020 759-771*

#### Sensors

- Autonomous Landing of Underwater Vehicles Using High-Resolution Bathymetry. Sangekar, M.N., +, JOE Oct. 2020 1252-1267
- Autonomous Tracking and Sampling of the Deep Chlorophyll Maximum Layer in an Open-Ocean Eddy by a Long-Range Autonomous Underwater Vehicle. *Zhang, Y.*, +, *JOE Oct. 2020 1308-1321*
- Closed-Form Estimation of Normal Modes From a Partially Sampled Water Column. Gazzah, H., +, JOE Oct. 2020 1574-1582
- Design of a Miniature Underwater Angle-of-Attack Sensor and Its Application to a Self-Propelled Robotic Fish. Yu, J., +, JOE Oct. 2020 1295-1307
- Non-Gaussian Estimation of a Potential Flow by an Actuated Lagrangian Sensor Steered to Separating Boundaries by Augmented Observability. *Lagor, F.D., +, JOE Oct. 2020 1203-1218*

## Shape

Numerical and Experimental Investigation of Supercavitating Flow Development Over Different Nose Shape Projectiles. *Mansour, M.Y.*, +, *JOE Oct. 2020 1370-1385* 

## Ships

- A Maneuvering Model for an Underwater Vehicle Near a Free Surface—Part I: Motion Without Memory Effects. *Battista, T., +, JOE Jan. 2020 212-226*
- A Neural-Network-Based Sensitivity Analysis Approach for Data-Driven Modeling of Ship Motion. *Cheng, X.,* +, *JOE April 2020 451-461*
- Global Robust Adaptive Trajectory Tracking Control for Surface Ships Under Input Saturation. Zhu, G., +, JOE April 2020 442-450
- Ice Condition Assessment Using Onboard Accelerometers and Statistical Change Detection. *Heyn, H.,* +, *JOE July 2020 898-914*
- Information Content of Ship Noise on a Drifting Volumetric Array for Passive Environmental Sensing. *Kubicko, J.S.*, +, *JOE April 2020 607-630*
- Ship-of-Opportunity Noise Inversions for Geoacoustic Profiles of a Layered Mud-Sand Seabed. *Tollefsen*, D., +, JOE Jan. 2020 189-200
- Signal classification
  - Evaluation of Alternative Direction-of-Arrival Methods for Oceanographic HF Radars. *Emery, B.M., JOE July 2020 990-1003*
- Signal denoising
  - Unit Circle Rectification of the Minimum Variance Distortionless Response Beamformer. *Tuladhar, S.R.,* +, *JOE April 2020 500-510*
- Signal detection
  - Evaluation of Alternative Direction-of-Arrival Methods for Oceanographic HF Radars. *Emery, B.M., JOE July 2020 990-1003*
  - High-Resolution Power Spectral Estimation Method Using Deconvolution. Guo, W., +, JOE April 2020 489-499

## Signal processing algorithms

- Closed-Form Estimation of Normal Modes From a Partially Sampled Water Column. Gazzah, H., +, JOE Oct. 2020 1574-1582
- Predicting False Alarm Rates for High-Resolution Antisubmarine Warfare Sonars in a Cluttering Environment Prone to False Alarm Rate Inflation. *Hjelmervik, K.T.*, +, *JOE Oct. 2020 1527-1537*

#### Signal reconstruction

Efficient Estimation and Prediction for Sparse Time-Varying Underwater Acoustic Channels. *Zhang, Y*, +, *JOE July 2020 1112-1125* 

#### Signal resolution

High-Resolution Power Spectral Estimation Method Using Deconvolution. *Guo, W.*, +, *JOE April 2020 489-499* 

## Signal to noise ratio

Utilizing Orthogonal Coprime Signals for Improving Broadband Acoustic Doppler Current Profilers. *Chi, C., +, JOE Oct. 2020 1516-1526* 

- Simulations
  - Development of a Hybrid Simulator for Underwater Vehicles With Manipulators. Razzanelli, M., +, JOE Oct. 2020 1235-1251

#### Simultaneous localization and mapping

Degeneracy-Aware Imaging Sonar Simultaneous Localization and Mapping. Westman, E., +, JOE Oct. 2020 1280-1294

Omnidirectional Multicamera Video Stitching Using Depth Maps. Bosch, J., +, JOE Oct. 2020 1337-1352

## Singular value decomposition

Closed-Form Estimation of Normal Modes From a Partially Sampled Water Column. *Gazzah, H.,* +, *JOE Oct. 2020 1574-1582* 

## Sliding mode control

Observation-Based Nonlinear Proportional–Derivative Control for Robust Trajectory Tracking for Autonomous Underwater Vehicles. *Guerrero, J.*, +, *JOE Oct. 2020 1190-1202* 

#### Software tools

Hydrodynamic Parameter Estimation for Autonomous Underwater Vehicles. Gibson, S.B., +, JOE April 2020 385-394

#### Sonar

Breaking Wave Imaging Using Lidar and Sonar. Bryan, O., +, JOE July 2020 887-897

#### Sonar detection

Correlation Detection of Boundaries in Sonar Applications With Repeated Codes. *Taudien, J.Y.*, +, *JOE July 2020 1078-1090* 

Improving Swath Sonar Water Column Imagery and Bathymetry With Adaptive Beamforming. Birkenes Lonmo, T.I., +, JOE Oct. 2020 1552-1563

Performance Prediction and Estimation for Underwater Target Detection Using Multichannel Sonar. Klausner, N.H., +, JOE April 2020 534-546

Predicting False Alarm Rates for High-Resolution Antisubmarine Warfare Sonars in a Cluttering Environment Prone to False Alarm Rate Inflation. *Hjelmervik, K.T.*, +, *JOE Oct. 2020 1527-1537* 

#### Sonar equipment

Performance of a Passive Acoustic Linear Array in a Tidal Channel. *Auvinen*, *M.F.*, +, *JOE Oct. 2020 1564-1573* 

#### Sonar imaging

Application of Forward-Scan Sonar Stereo for 3-D Scene Reconstruction. Negahdaripour, S., JOE April 2020 547-562

Distributed Convex Optimization Compressed Sensing Method for Sparse Planar Array Synthesis in 3-D Imaging Sonar Systems. *Gu, B.*, +, *JOE July 2020 1022-1033* 

- Inverse Synthetic Aperture Sonar Imaging of Underwater Vehicles Utilizing 3-D Rotations. *Sun, S.,* +, *JOE April 2020 563-576*
- Manifold-Based Classification of Underwater Unexploded Ordnance in Low-Frequency Sonar. *Klausner*, *N.H.*, +, *JOE July 2020 1034-1044*
- Performance Prediction and Estimation for Underwater Target Detection Using Multichannel Sonar. *Klausner, N.H.*, +, *JOE April 2020 534-546*

Synthetic Aperture Sonar Track Registration With Motion Compensation for Coherent Change Detection. *Myers*, V., +, *JOE July 2020 1045-1062* 

## Sonar measurements

Robust Resolution of Velocity Ambiguity for Multifrequency Pulse-to-Pulse Coherent Doppler Sonars. *Chi*, *C.*, +, *JOE Oct. 2020 1506-1515* 

## Sonar navigation

Degeneracy-Aware Imaging Sonar Simultaneous Localization and Mapping. Westman, E., +, JOE Oct. 2020 1280-1294

## Sonar signal processing

Improved Active Sonar Tracking in Clutter Using Integrated Feature Data. Mellema, G.R., JOE Jan. 2020 304-318

Trans-Dimensional Inversion of Modal Dispersion Data on the New England Mud Patch. Bonnel, J., +, JOE Jan. 2020 116-130

#### Sonar tracking

Improved Active Sonar Tracking in Clutter Using Integrated Feature Data. Mellema, G.R., JOE Jan. 2020 304-318

Synthetic Aperture Sonar Track Registration With Motion Compensation for Coherent Change Detection. *Myers*, V, +, *JOE July 2020 1045-1062* 

## Spatial coherence

Interpolation Kernels for Synthetic Aperture Sonar Along-Track Motion Estimation. Brown, D.C., +, JOE Oct. 2020 1497-1505

## Spectral analysis

High-Resolution Power Spectral Estimation Method Using Deconvolution. Guo, W., +, JOE April 2020 489-499 Waveguide-Invariant-Based Ranging and Receiver Localization Using Tonal Sources of Opportunity. Young, A.H., +, JOE April 2020 631-644

## Stability

- Experimental Comparison of Two Composite MRAC Methods for UUV Operations With Low Adaptation Gains. *Makavita, C.D.*, +, *JOE Jan. 2020* 227-246
- Global Robust Adaptive Trajectory Tracking Control for Surface Ships Under Input Saturation. Zhu, G., +, JOE April 2020 442-450
- Redefined Output Model-Free Adaptive Control Method and Unmanned Surface Vehicle Heading Control. *Liao*, Y, +, *JOE July 2020 714-723*

## State estimation

Underwater Position and Attitude Estimation Using Acoustic, Inertial, and Depth Measurements. *Jorgensen, E.K.*, +, *JOE Oct. 2020 1450-1465* 

## Statistical analysis

- Guest Editorial An Overview of the Seabed Characterization Experiment. Wilson, P.S., +, JOE Jan. 2020 1-13
- Ice Condition Assessment Using Onboard Accelerometers and Statistical Change Detection. *Heyn, H.*, +, *JOE July 2020 898-914*

Manifold-Based Classification of Underwater Unexploded Ordnance in Low-Frequency Sonar. *Klausner*, *N.H.*, +, *JOE July 2020 1034-1044* 

## Stereo image processing

- Application of Forward-Scan Sonar Stereo for 3-D Scene Reconstruction. Negahdaripour, S., JOE April 2020 547-562
- Obstacle Tracking for Unmanned Surface Vessels Using 3-D Point Cloud. Muhovic, J., +, JOE July 2020 786-798
- Visual Docking Against Bubble Noise With 3-D Perception Using Dual-Eye Cameras. *Lwin, K.N.*, +, *JOE Jan. 2020 247-270*

## Stochastic processes

Investigation on Stochastic Model Refinement for Precise Underwater Positioning. Zhao, S., +, JOE Oct. 2020 1482-1496

## Storms

Long-Term Estimation of Wave Climate Variability in the Western Bay of Bengal. Sadhukhan, B., +, JOE July 2020 871-886

## Submarine cables

Design, Characterization, and Test of a Versatile Single-Mode Power-Over-Fiber and Communication System for Seafloor Observatories. *Diouf, C.*, +, *JOE April 2020 656-664* 

#### Support vector machines

- Data Processing Method of Multibeam Bathymetry Based on Sparse Weighted LS-SVM Machine Algorithm. *Huang, X.*, +, *JOE Oct. 2020* 1538-1551
- Ice Condition Assessment Using Onboard Accelerometers and Statistical Change Detection. *Heyn, H.*, +, *JOE July 2020 898-914*

#### Surface topography

Data Processing Method of Multibeam Bathymetry Based on Sparse Weighted LS-SVM Machine Algorithm. *Huang, X.*, +, *JOE Oct. 2020* 1538-1551

#### Surveillance

Higher-Order-Statistics-Based Direction-of-Arrival Estimation of Multiple Wideband Sources With Single Acoustic Vector Sensor. *Agarwal, A.*, +, *JOE Oct. 2020 1439-1449* 

#### Synchronization

Asynchronous Localization of Underwater Target Using Consensus-Based Unscented Kalman Filtering. Yan, J., +, JOE Oct. 2020 1466-1481

Broadband Waveform Geoacoustic Inversions With Absolute Travel Time. Lin, Y, +, JOE Jan. 2020 174-188

#### Synthetic aperture radar

Inverse Synthetic Aperture Sonar Imaging of Underwater Vehicles Utilizing 3-D Rotations. *Sun, S.,* +, *JOE April 2020 563-576* 

#### Synthetic aperture sonar

- Interpolation Kernels for Synthetic Aperture Sonar Along-Track Motion Estimation. Brown, D.C., +, JOE Oct. 2020 1497-1505
- Inverse Synthetic Aperture Sonar Imaging of Underwater Vehicles Utilizing 3-D Rotations. *Sun, S.*, +, *JOE April 2020 563-576*
- Performance Prediction and Estimation for Underwater Target Detection Using Multichannel Sonar. Klausner, N.H., +, JOE April 2020 534-546
- Synthetic Aperture Sonar Track Registration With Motion Compensation for Coherent Change Detection. *Myers*, V., +, JOE July 2020 1045-1062

## Target tracking

- A Scheme for Multitarget Lateral Velocity Measurement With High-Frequency Monostatic Radar. Li, M., +, JOE Oct. 2020 1427-1438
- Improved Active Sonar Tracking in Clutter Using Integrated Feature Data. Mellema, G.R., JOE Jan. 2020 304-318
- Underwater Acoustical Localization of the Black Box Utilizing Single Autonomous Underwater Vehicle Based on the Second-Order Time Difference of Arrival. Sun, S., +, JOE Oct. 2020 1268-1279

## **Telecommunication computing**

Reinforcement-Learning-Based Relay Mobility and Power Allocation for Underwater Sensor Networks Against Jamming. Xiao, L., +, JOE July 2020 1148-1156

## **Telecommunication security**

Reinforcement-Learning-Based Relay Mobility and Power Allocation for Underwater Sensor Networks Against Jamming. *Xiao, L.*, +, *JOE July* 2020 1148-1156

## Three-term control

Adaptive Dynamic Surface Control for a Hybrid Aerial Underwater Vehicle With Parametric Dynamics and Uncertainties. *Lu, D.*, +, *JOE July 2020* 740-758

Theoretical and Experimental Investigations on the Design of a Hybrid Depth Controller for a Standalone Variable Buoyancy System—vBuoy. Ranganathan, T., +, JOE April 2020 414-429

## Time difference of arrival

Underwater Acoustical Localization of the Black Box Utilizing Single Autonomous Underwater Vehicle Based on the Second-Order Time Difference of Arrival. *Sun, S., +, JOE Oct. 2020 1268-1279* 

#### Time measurement

Underwater Acoustical Localization of the Black Box Utilizing Single Autonomous Underwater Vehicle Based on the Second-Order Time Difference of Arrival. Sun, S., +, JOE Oct. 2020 1268-1279

#### **Time-frequency analysis**

Frequency–Time Domain Turbo Equalization for Underwater Acoustic Communications. Xi, J., +, JOE April 2020 665-679

## Time-of-arrival estimation

Underwater Acoustic Source Seeking Using Time-Difference-of-Arrival Measurements. *Mandic, F.*, +, *JOE July 2020 759-771* 

#### **Time-varying channels**

Efficient Estimation and Prediction for Sparse Time-Varying Underwater Acoustic Channels. *Zhang, Y.*, +, *JOE July 2020 1112-1125* 

#### **Time-varying systems**

- Adaptive Dynamic Surface Control for a Hybrid Aerial Underwater Vehicle With Parametric Dynamics and Uncertainties. *Lu, D.*, +, *JOE July 2020* 740-758
- An Adaptive EKF-FMPC for the Trajectory Tracking of UVMS. Dai, Y, +, JOE July 2020 699-713
- Global Robust Adaptive Trajectory Tracking Control for Surface Ships Under Input Saturation. Zhu, G., +, JOE April 2020 442-450
- Line-of-Sight-Based Guidance and Adaptive Neural Path-Following Control for Sailboats. *Deng, Y.*, +, *JOE Oct. 2020 1177-1189*
- Theoretical and Experimental Investigations on the Design of a Hybrid Depth Controller for a Standalone Variable Buoyancy System—vBuoy. Ranganathan, T., +, JOE April 2020 414-429

## Tracking

- Global Exponential Tracking Control for an Autonomous Surface Vessel: An Integral Concurrent Learning Approach. *Bell, Z.I.*, +, *JOE April 2020 362-370*
- Global Robust Adaptive Trajectory Tracking Control for Surface Ships Under Input Saturation. Zhu, G., +, JOE April 2020 442-450

## **Trajectory planning**

Toward Time-Optimal Trajectory Planning for Autonomous Ship Maneuvering in Close-Range Encounters. Li, G., +, JOE Oct. 2020 1219-1234

## Trajectory tracking

Observation-Based Nonlinear Proportional–Derivative Control for Robust Trajectory Tracking for Autonomous Underwater Vehicles. *Guerrero, J.*, +, *JOE Oct. 2020 1190-1202* 

## Transducers

- Data Processing Method of Multibeam Bathymetry Based on Sparse Weighted LS-SVM Machine Algorithm. *Huang, X.*, +, *JOE Oct. 2020* 1538-1551
- Investigation on Stochastic Model Refinement for Precise Underwater Positioning. Zhao, S., +, JOE Oct. 2020 1482-1496

## Transient response

Support-Constrained Mixed-Norm Optimization Techniques for Estimating Multipath Activity in Shallow Water Acoustic Channels. *McCarthy, R.A.*, +, *JOE July 2020 683-698* 

## Transponders

- Autonomous Underwater Vehicle Homing With a Single Range-Only Beacon. Keane, J.R., +, JOE April 2020 395-403
- Investigation on Stochastic Model Refinement for Precise Underwater Positioning. Zhao, S., +, JOE Oct. 2020 1482-1496

Real-Time Offshore Coastal Acoustic Tomography Enabled With Mirror-Transpond Functionality. *Chen, M.*, +, *JOE April 2020 645-655* 

## Turbidity

Offshore Underwater Image Restoration Using Reflection-Decomposition-Based Transmission Map Estimation. Yang, M., +, JOE April 2020 521-533

#### Turbines

- An Unsteady Pressure Probe for the Measurement of Flow Unsteadiness in Tidal Channels. *Young, A.M.*, +, *JOE Oct. 2020 1411-1426*
- Performance of a Passive Acoustic Linear Array in a Tidal Channel. Auvinen, M.F., +, JOE Oct. 2020 1564-1573

## Turbo codes

Frequency–Time Domain Turbo Equalization for Underwater Acoustic Communications. Xi, J., +, JOE April 2020 665-679

## Two-phase flow

Breaking Wave Imaging Using Lidar and Sonar. Bryan, O., +, JOE July 2020 887-897

#### U

#### Uncertain systems

- Adaptive Dynamic Surface Control for a Hybrid Aerial Underwater Vehicle With Parametric Dynamics and Uncertainties. *Lu, D.*, +, *JOE July 2020* 740-758
- An Adaptive EKF-FMPC for the Trajectory Tracking of UVMS. *Dai*, *Y*, +, *JOE July 2020 699-713*
- Experimental Comparison of Two Composite MRAC Methods for UUV Operations With Low Adaptation Gains. *Makavita, C.D.*, +, *JOE Jan. 2020* 227-246
- Global Robust Adaptive Trajectory Tracking Control for Surface Ships Under Input Saturation. Zhu, G., +, JOE April 2020 442-450
- Redefined Output Model-Free Adaptive Control Method and Unmanned Surface Vehicle Heading Control. *Liao*, Y., +, *JOE July 2020 714-723*

#### Uncertainty

Observation-Based Nonlinear Proportional–Derivative Control for Robust Trajectory Tracking for Autonomous Underwater Vehicles. *Guerrero, J.*, +, *JOE Oct. 2020 1190-1202* 

#### Underwater acoustic communication

- Autonomous Underwater Vehicle Homing With a Single Range-Only Beacon. Keane, J.R., +, JOE April 2020 395-403
- Efficient Estimation and Prediction for Sparse Time-Varying Underwater Acoustic Channels. *Zhang, Y.*, +, *JOE July 2020 1112-1125*
- Frequency–Time Domain Turbo Equalization for Underwater Acoustic Communications. Xi, J., +, JOE April 2020 665-679
- On the Achievable Rate of Multiple-Input–Multiple-Output Underwater Acoustic Communications. *Bouvet, P.*, +, *JOE July 2020 1126-1137*
- Reinforcement-Learning-Based Relay Mobility and Power Allocation for Underwater Sensor Networks Against Jamming. Xiao, L., +, JOE July 2020 1148-1156
- Support-Constrained Mixed-Norm Optimization Techniques for Estimating Multipath Activity in Shallow Water Acoustic Channels. *McCarthy, R.A.*, +, *JOE July 2020 683-698*

Tracking the Slipper Lobster Using Acoustic Tagging: Testbed Description. Alexandri, T., +, JOE April 2020 577-585

Underwater Acoustic Source Seeking Using Time-Difference-of-Arrival Measurements. Mandic, F., +, JOE July 2020 759-771

#### Underwater acoustic propagation

- Depth-Dependent Geoacoustic Inferences With Dispersion at the New England Mud Patch via Reflection Coefficient Inversion. *Belcourt, J.*, +, *JOE Jan. 2020 69-91*
- Diurnal Fluctuation of Shallow-Water Acoustic Propagation in the Cold Dome Off Northeastern Taiwan in Spring. *Chen, C.*, +, *JOE July 2020* 1099-1111
- Effect of Shear on Modal Arrival Times. Potty, G.R., +, JOE Jan. 2020 103-115
- Estimates of Low-Frequency Sound Speed and Attenuation in a Surface Mud Layer Using Low-Order Modes. Wan, L., +, JOE Jan. 2020 201-211
- Estimation of the Geoacoustic Properties of the New England Mud Patch From the Vertical Coherence of the Ambient Noise in the Water Column. *Barclay, D.R.*, +, *JOE Jan. 2020 51-59*
- Geoacoustic Inversion Using an Autonomous Underwater Vehicle in Conjunction With Distributed Sensors. Zheng, Z., +, JOE Jan. 2020 319-341
- Ship-of-Opportunity Noise Inversions for Geoacoustic Profiles of a Layered Mud-Sand Seabed. *Tollefsen, D.*, +, *JOE Jan. 2020 189-200*
- Trans-Dimensional Inversion of Modal Dispersion Data on the New England Mud Patch. *Bonnel*, J., +, JOE Jan. 2020 116-130
- Waveguide-Invariant-Based Ranging and Receiver Localization Using Tonal Sources of Opportunity. Young, A.H., +, JOE April 2020 631-644

## **Underwater acoustics**

- Asynchronous Localization of Underwater Target Using Consensus-Based Unscented Kalman Filtering. Yan, J., +, JOE Oct. 2020 1466-1481
- Sparse Direct Adaptive Equalization for Single-Carrier MIMO Underwater Acoustic Communications. *Tao*, J., +, *JOE Oct. 2020 1622-1631*
- Underwater Acoustic Communication Using Multiple-Input–Multiple-Output Doppler-Resilient Orthogonal Signal Division Multiplexing. *Ebihara*, *T.*, +, *JOE Oct. 2020 1594-1610*

## Underwater communication

- Silicon-Photomultiplier-Based Underwater Wireless Optical Communication Using Pulse-Amplitude Modulation. *Khalighi, M.A.*, +, *JOE Oct.* 2020 1611-1621
- Sparse Direct Adaptive Equalization for Single-Carrier MIMO Underwater Acoustic Communications. *Tao, J.*, +, *JOE Oct. 2020 1622-1631*
- Underwater Acoustic Communication Using Multiple-Input–Multiple-Output Doppler-Resilient Orthogonal Signal Division Multiplexing. *Ebihara*, *T.*, +, *JOE Oct. 2020 1594-1610*

## **Underwater optics**

Design, Characterization, and Test of a Versatile Single-Mode Power-Over-Fiber and Communication System for Seafloor Observatories. *Diouf, C.*, +, *JOE April 2020 656-664* 

## Underwater sound

In Situ Measurements of Compressional Wave Speed During Gravity Coring Operations in the New England Mud Patch. Ballard, M.S., +, JOE Jan. 2020 26-38

- Breaking Wave Imaging Using Lidar and Sonar. Bryan, O., +, JOE July 2020 887-897
- Broadband Waveform Geoacoustic Inversions With Absolute Travel Time. Lin, Y., +, JOE Jan. 2020 174-188
- Effect of Shear on Modal Arrival Times. Potty, G.R., +, JOE Jan. 2020 103-115
- Estimates of Low-Frequency Sound Speed and Attenuation in a Surface Mud Layer Using Low-Order Modes. Wan, L., +, JOE Jan. 2020 201-211
- Estimation of the Geoacoustic Properties of the New England Mud Patch From the Vertical Coherence of the Ambient Noise in the Water Column. *Barclay, D.R.*, +, *JOE Jan. 2020 51-59*
- Geoacoustic Inversion for a New England Mud Patch Sediment Using the Silt-Suspension Theory of Marine Mud. *Brown, E.M.*, +, *JOE Jan. 2020* 144-160

Geoacoustic Inversion Using an Autonomous Underwater Vehicle in Conjunction With Distributed Sensors. Zheng, Z., +, JOE Jan. 2020 319-341

- Linearized Bayesian Inversion for Experiment Geometry at the New England Mud Patch. *Belcourt, J.*, +, *JOE Jan. 2020 60-68*
- Manifold-Based Classification of Underwater Unexploded Ordnance in Low-Frequency Sonar. *Klausner*, *N.H.*, +, *JOE July 2020 1034-1044*
- Maximum Entropy Derived Statistics of Sound-Speed Structure in a Fine-Grained Sediment Inferred From Sparse Broadband Acoustic Measurements on the New England Continental Shelf. *Knobles, D.P.*, +, *JOE Jan.* 2020 161-173
- Measurement of Sound Speed in Fine-Grained Sediments During the Seabed Characterization Experiment. Yang, J., +, JOE Jan. 2020 39-50
- Multipath Broadband Localization, Bathymetry, and Sediment Inversion. Michalopoulou, Z., +, JOE Jan. 2020 92-102
- Numerical and Experimental Study of Wave Propagation in Water-Saturated Granular Media Using Effective Method Theories and a Full-Wave Numerical Simulation. *Mizuno, K.*, +, *JOE July 2020 772-785*
- On the Achievable Rate of Multiple-Input–Multiple-Output Underwater Acoustic Communications. *Bouvet, P.*, +, *JOE July 2020 1126-1137*
- Ship-of-Opportunity Noise Inversions for Geoacoustic Profiles of a Layered Mud-Sand Seabed. *Tollefsen, D.*, +, *JOE Jan. 2020 189-200*
- Short-Range Signatures of Explosive Sounds in Shallow Water Used for Seabed Characterization. *Wilson, P.S., +, JOE Jan. 2020 14-25*
- Trans-Dimensional Inversion of Modal Dispersion Data on the New England Mud Patch. *Bonnel*, J., +, *JOE Jan. 2020 116-130*
- Underwater Acoustic Source Seeking Using Time-Difference-of-Arrival Measurements. *Mandic, F.*, +, *JOE July 2020 759-771*
- Vector Acoustic Analysis of Time-Separated Modal Arrivals From Explosive Sound Sources During the 2017 Seabed Characterization Experiment. Dahl, P.H., +, JOE Jan. 2020 131-143
- Waveguide-Invariant-Based Ranging and Receiver Localization Using Tonal Sources of Opportunity. Young, A.H., +, JOE April 2020 631-644 Underwater vehicles

A Maneuvering Model for an Underwater Vehicle Near a Free Surface—Part

- I: Motion Without Memory Effects. *Battista, T.,* +, *JOE Jan. 2020 212-226* An Adaptive EKF-FMPC for the Trajectory Tracking of UVMS. *Dai, Y.*, +, *JOE July 2020 699-713*
- Autonomous Underwater Vehicle Homing With a Single Range-Only Beacon. Keane, J.R., +, JOE April 2020 395-403
- Computational Fluid Dynamics Prediction of the Dynamic Behavior of Autonomous Underwater Vehicles. *Liu*, *Y*, +, *JOE July 2020 724-739*
- Development of a Hybrid Simulator for Underwater Vehicles With Manipulators. *Razzanelli, M.*, +, *JOE Oct. 2020 1235-1251*
- Geoacoustic Inversion Using an Autonomous Underwater Vehicle in Conjunction With Distributed Sensors. Zheng, Z., +, JOE Jan. 2020 319-341
- Hydrodynamic Shape Optimization of an Autonomous Underwater Vehicle With an Integrated Lifting Line and Viscous Continuous Adjoint Approach. *Wu, S.*, +, *JOE July 2020 851-861*
- Inverse Synthetic Aperture Sonar Imaging of Underwater Vehicles Utilizing 3-D Rotations. *Sun, S.*, +, *JOE April 2020 563-576*
- Numerical and Experimental Investigation of Supercavitating Flow Development Over Different Nose Shape Projectiles. *Mansour, M.Y.*, +, *JOE Oct.* 2020 1370-1385
- Observation-Based Nonlinear Proportional–Derivative Control for Robust Trajectory Tracking for Autonomous Underwater Vehicles. *Guerrero, J.*, +, *JOE Oct. 2020 1190-1202*
- Realizing Efficient Front Crawl Stroke With a Wheel-Paddle-Integrated Mechanism: Inspired by Human Competitive Swimming. *Shen, Y.*, +, *JOE July 2020 831-839*
- Sizing Drop Weights for Deep Diving Submersibles Taking Into Account Nonuniform Seawater Density Profiles. *Thornton, B., JOE July 2020 979-989*
- Theoretical and Experimental Investigations on the Design of a Hybrid Depth Controller for a Standalone Variable Buoyancy System—vBuoy. Ranganathan, T., +, JOE April 2020 414-429

Information Content of Ship Noise on a Drifting Volumetric Array for Passive Environmental Sensing. *Kubicko, J.S.*, +, *JOE April 2020 607-630* 

## Unmanned underwater vehicles

- Degeneracy-Aware Imaging Sonar Simultaneous Localization and Mapping. Westman, E., +, JOE Oct. 2020 1280-1294
- Design of a Miniature Underwater Angle-of-Attack Sensor and Its Application to a Self-Propelled Robotic Fish. Yu, J., +, JOE Oct. 2020 1295-1307
  Omnidirectional Multicamera Video Stitching Using Depth Maps. Bosch, J., +, JOE Oct. 2020 1337-1352

#### **Unmanned vehicles**

Development of a Hybrid Simulator for Underwater Vehicles With Manipulators. *Razzanelli, M.*, +, *JOE Oct. 2020 1235-1251* 

V

## Variable structure systems

- Nonlinear Model Predictive Control Applied to an Autonomous Underwater Vehicle. Saback, R.M., +, JOE July 2020 799-812
- Theoretical and Experimental Investigations on the Design of a Hybrid Depth Controller for a Standalone Variable Buoyancy System—vBuoy. Ranganathan, T., +, JOE April 2020 414-429

#### Vectors

Unit Circle Rectification of the Minimum Variance Distortionless Response Beamformer. *Tuladhar, S.R.*, +, *JOE April 2020 500-510* 

#### Vehicle dynamics

- A Maneuvering Model for an Underwater Vehicle Near a Free Surface—Part I: Motion Without Memory Effects. *Battista, T., +, JOE Jan. 2020 212-226*
- Adaptive Dynamic Surface Control for a Hybrid Aerial Underwater Vehicle With Parametric Dynamics and Uncertainties. *Lu, D.*, +, *JOE July 2020* 740-758
- Development of a Hybrid Simulator for Underwater Vehicles With Manipulators. *Razzanelli, M.*, +, *JOE Oct. 2020 1235-1251*
- Dynamic Modeling of Passively Draining Structures for Aerial–Aquatic Unmanned Vehicles. *Stewart, W.*, +, *JOE July 2020 840-850*
- Estimation of AUV Hydrodynamic Coefficients Using Analytical and System Identification Approaches. Cardenas, P., +, JOE Oct. 2020 1157-1176
- Global Exponential Tracking Control for an Autonomous Surface Vessel: An Integral Concurrent Learning Approach. *Bell, Z.I.*, +, *JOE April 2020* 362-370
- Observation-Based Nonlinear Proportional–Derivative Control for Robust Trajectory Tracking for Autonomous Underwater Vehicles. *Guerrero, J.*, +, *JOE Oct. 2020 1190-1202*

#### Velocimeters

## Velocity measurement

- A Scheme for Multitarget Lateral Velocity Measurement With High-Frequency Monostatic Radar. Li, M., +, JOE Oct. 2020 1427-1438
- Robust Resolution of Velocity Ambiguity for Multifrequency Pulse-to-Pulse Coherent Doppler Sonars. *Chi, C.,* +, *JOE Oct. 2020 1506-1515*
- Utilizing Orthogonal Coprime Signals for Improving Broadband Acoustic Doppler Current Profilers. *Chi, C., +, JOE Oct. 2020 1516-1526*

#### Velocity measurements

An Unsteady Pressure Probe for the Measurement of Flow Unsteadiness in Tidal Channels. Young, A.M., +, JOE Oct. 2020 1411-1426

## Video cameras

Visual Docking Against Bubble Noise With 3-D Perception Using Dual-Eye Cameras. *Lwin, K.N., +, JOE Jan. 2020 247-270* 

## Video equipment

A No-Reference Video Quality Assessment Model for Underwater Networks. *Moreno-Roldan, J.*, +, *JOE Jan. 2020 342-346* 

## Video recording

A No-Reference Video Quality Assessment Model for Underwater Networks. *Moreno-Roldan, J.*, +, *JOE Jan. 2020 342-346* 

## Video signal processing

A No-Reference Video Quality Assessment Model for Underwater Networks. *Moreno-Roldan, J.*, +, *JOE Jan. 2020 342-346* 

## Visual servoing

Visual Docking Against Bubble Noise With 3-D Perception Using Dual-Eye Cameras. Lwin, K.N., +, JOE Jan. 2020 247-270

## W

## Wave power generation

- A Study on the Effects of Wave Spectra on Wave Energy Conversions. Prendergast, J., +, JOE Jan. 2020 271-283
- Buoy Analysis in a Point-Absorber Wave Energy Converter. Ruezga, A., +, JOE April 2020 472-479
- Short-Term Forecasting of Sea Surface Elevation for Wave Energy Applications: The Autoregressive Model Revisited. *Pena-Sanchez, Y.*, +, *JOE April 2020 462-471*

## Wave power plants

A Study on the Effects of Wave Spectra on Wave Energy Conversions. Prendergast, J., +, JOE Jan. 2020 271-283

## Waveguides

Waveguide-Invariant-Based Ranging and Receiver Localization Using Tonal Sources of Opportunity. Young, A.H., +, JOE April 2020 631-644

## Weapons

Seafloor Burial of Surrogate Unexploded Ordnance by Wave-Induced Sediment Instability. *Klammler*; H., +, JOE July 2020 927-936

Smart Surrogate Munitions for Nearshore Unexploded Ordnance Mobility/ Burial Studies. Bruder, B., +, JOE Jan. 2020 284-303

## Wheels

Realizing Efficient Front Crawl Stroke With a Wheel-Paddle-Integrated Mechanism: Inspired by Human Competitive Swimming. *Shen, Y.*, +, *JOE July 2020 831-839* 

## White noise

Unit Circle Rectification of the Minimum Variance Distortionless Response Beamformer. *Tuladhar*, S.R., +, JOE April 2020 500-510

## Wind

- Approximate Solutions for Surface Reflection Loss Inclusive of a Practical Model of Refraction in the Wind-Driven Bubbly Layer. *Jones, A.D.*, +, *JOE April 2020 586-606*
- Long-Term Estimation of Wave Climate Variability in the Western Bay of Bengal. Sadhukhan, B., +, JOE July 2020 871-886
- Nonlinear Extraction of Directional Ocean Wave Spectrum From Synthetic Bistatic High-Frequency Surface Wave Radar Data. Silva, M.T., +, JOE July 2020 1004-1021

#### Wind tunnels

An Unsteady Pressure Probe for the Measurement of Flow Unsteadiness in Tidal Channels. *Young, A.M.*, +, *JOE Oct. 2020 1411-1426* 

## Wireless channels

Efficient Estimation and Prediction for Sparse Time-Varying Underwater Acoustic Channels. *Zhang, Y.*, +, *JOE July 2020 1112-1125* 

## Wireless communication

Silicon-Photomultiplier-Based Underwater Wireless Optical Communication Using Pulse-Amplitude Modulation. *Khalighi, M.A.*, +, *JOE Oct.* 2020 1611-1621

## Wireless sensor networks

- Reinforcement-Learning-Based Relay Mobility and Power Allocation for Underwater Sensor Networks Against Jamming. *Xiao, L., +, JOE July* 2020 1148-1156
- Silicon-Photomultiplier-Based Underwater Wireless Optical Communication Using Pulse-Amplitude Modulation. *Khalighi, M.A.*, +, *JOE Oct.* 2020 1611-1621
- Tracking the Slipper Lobster Using Acoustic Tagging: Testbed Description. Alexandri, T., +, JOE April 2020 577-585

Differential Pressure Sensor Speedometer for Autonomous Underwater Vehicle Velocity Estimation. *Meurer, C., +, JOE July 2020 946-978*