• Supplementary File •

## Sea-surface Reflection-aided Underwater Localization with Unknown Sound Speed

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Figure 1 Illustration of the SN-target geometry in the z-distance plane.



Figure 2 Comparison of the localization RMSE performance versus measurement noise standard deviation  $\sigma$ .

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Figure 3 Comparison of the localization bias performance versus measurement noise standard deviation  $\sigma$ .



Figure 4 Comparison of the localization RMSE performance versus the number of TDOA measurements.