

Short Communications

BIBLIOGRAPHY 001A

A BIBLIOGRAPHY ON NUMERICAL INVERSION OF THE LAPLACE TRANSFORM AND APPLICATIONS : A SUPPLEMENT

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INTRODUCTION

In a recent paper, Piessens [1] listed an extensive bibliography of works on numerical inversion of Laplace transform. The present short note aims to supplement that publication with titles covering the period up to April 1976.

1955

1. Green, J. S.

The calculation of the time-responses of linear systems.

Ph. D. Thesis, Imperial College, University of London, 1955.

1960

1. Batson, L. E.

On inversion of the Laplace transformation by means of a step function.

Ph. D. Thesis, The University of Texas at Austin, U.S.A., 1960.

2. Wynn, P.

The rational approximation of functions which are formally defined by a power series expansion. Math. Comp. 14 (1960), 147-186.

1961

1. Wood, T.

Inversion of a Laplace transform arising from a problem in applied chemical kinetics.

Nature, Lond. 191 (1961), 589-590.

1966

1. Chen, C. F.; Parker, R. R.

Generalization of Heaviside expansion technique to transition matrix evaluation.

IEEE Trans. Educ., E-9 (1966), 209-212.

2. Miller, M. K.

Numerical inversion of the Laplace transform by the use of Jacobi polynomials.

Ph. D. Thesis, The University of Texas at Austin, U.S.A., 1966.

1967

1. Valentine, C. W.

A method for partial fraction decomposition. SIAM Rev. 9 (1967), 232-233.

1969

1. N-Nagy, F. L.; Al-Tikriti, M. N.

Fast inverse Laplace transformation of functions containing multiple pole.

Elect. Lett. 5 (1969), 547-548.

1970

1. Bohman, H.

A method to calculate the distribution function when the characteristic function is known. BIT 10 (1970), 237-242.

2. Chen, C. F.; Yates, R. E.

A new approach to matrix Heaviside expansion. Int. J. Contr. 11 (1970), 431-448.

3. Greenberg, D. B.

Inversion of a Laplace transform arising from a transport delay function.

Chem. Eng. Sci. 25 (1970), 1826-1827.

4. N-Nagy, F. L.; Al-Tikriti, M. N.

Partial fraction expansion of a transfer function matrix with one multiple eigenvalue.

Elect. Lett. 6 (1970), 215-216.

1972

1. Astrakhan, V. I.

On numerical inversion of representations in the

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CH 8006, Switzerland.

- analysis of circuits by the Laplace transform.
Elektrischestvo, Electr. Technol. USSR, nr. 12
(1972), 73-76.
2. Bohman, H.
From characteristic function to distribution function via Fourier analysis.
BIT 12 (1972), 279-283.
 3. Ichikawa, S.; Kishima, A.
Application of Fourier series techniques to inverse Laplace transform I.
Mem. Fac. Eng. Kyoto, Univ. Japan 34 (1972), 53-67.
 4. Iordanov, V. J.; Mikhailov, M. D.
Numerical inversion of Laplace transforms using a computer.
Nauchni Tr. Topotekh 2 (1972), 93-97.
 5. N-Nagy, F. L.; Al-Tikriti, M. N.
Calculation and application of high order derivatives of rational functions using matrix Heaviside expansion.
J. Frankl. Inst. 293 (1972), 143-147.
 6. N-Nagy, F. L.; Uraz, A.
Direct method for transfer matrix inversion.
Proc. IEE 119 (1972), 1220-1221.
 7. N-Nagy, F. L.; Uraz, A.
Partial fraction expansion of transfer function having multiple poles.
Proc. IEE 119 (1972), 1415-1416.
- 1973
1. Davies, R. B.
Numerical inversion of a characteristic function.
BIOMETRIKA 60 (1973), 415-417.
 2. Drane, R. E.
A numerical inversion technique for Laplace transform.
Master's thesis, Louisiana Technical University,
Ruston, La, 1973.
 3. Ichikawa, S.; Kishima, A.
Applications of Fourier series techniques to inverse Laplace transform II.
Mem. Fac. Eng. Kyoto, Univ. Japan 35 (1973), 393-400.
 4. N-Nagy, F. L.; Al-Tikriti, M. N.
Matrix formulation of the Wiener-Lee decomposition and Laguerre function.
Int. J. Syst. Sci. 4 (1973), 937-944.
 5. Nakhla, M. R.; Singhal, K.; Vlach, J.
Single method for numerical inversion of Laplace transforms.
Proc. 16th Midwest Symp. on Circuit Theory, pg XIV, 5.1-9, April 1973.
 6. O'Brien, M. A.; Fitzgerald, J. J.; Dillon, E. C.
Application of the fast Fourier transform to linear systems in civil engineering.
Inst. J. Num. Meth. in Eng. 6 (1973), 381-394.
7. Vaske, B.; Willöper, J.
Numerische Umkehrung der Laplace-Transformation.
Diplomarbeit Universität Rostock, 1973.
- 1974
1. Holzlöhner, U.
A finite element analysis for time-dependent problems.
Int. J. Num. Meth. in Eng. 8 (1974), 55-69.
 2. Smith, S. J.
A numerical algorithm for the inversion of a truncated Laplace transform with applications to biomedical problems.
Thesis, Washington University, St. Louis, Mo, U.S.A., 1974.
 3. Stepanek, E.
Erweiterung einer numerischen Methode zur Umkehr der Laplace-Transformation.
Z. Elektr. Inform.-u. Energietechnik 4 (1974), 41-44.
 4. Uraz, A.; N-Nagy, F. L.
Matrix formulation for partial-fraction expansion of transfer functions.
J. Frankl. Inst. 297 (1974), 81-87.
- 1975
1. Berg, L.
Zur approximativen Umkehrung der Laplace-Transformation.
ZAMM 55 (1975), 346-348.
 2. Beskos, D. E.; Boley, B. A.
Use of dynamic influence coefficients in forced vibration problems with the aid of Laplace transform.
Comp. & Structures 5 (1975), 263-269.
 3. Greco, G.; Iorio, G.; Gibilaro, L. G.
Numerical inversion of the Laplace transform; an explicit closed form expression for the time domain solution.
Chem. Eng. Sci. 30 (1975), 1069-1074.
 4. Hetnarski, R. B.
An algorithm for generating some inverse Laplace transforms of exponential form.
Z. Angew. Math. Phys. 26 (1975), 249-253.
 5. Levin, D.
Numerical inversion of the Laplace transform by accelerating the convergence of Bromwich's integral.
J. Comp. Appl. Math. 1 (1975), 247-250.
 6. Longman, I. M.
Application of best rational function approximation for Laplace transform inversion.
J. Comp. Appl. Math. 1 (1975), 17-23.

7. McCarthy, T. O.
Sampling techniques in the analysis of power-system transients.
Int. J. Num. Meth. in Eng. 9 (1975), 387-399.

8. Piessens, R.
A bibliography on numerical inversion of the Laplace transforms and its applications.
J. Comp. Appl. Math. 1 (1975), 115-128.

9. Piessens, R.
Comments on 'On the construction of Gaussian quadrature rules for inverting the Laplace transform'.
Proc. IEEE 63 (1975), 817-818.

10. Rasmussen, M. L.
Large-time inversion of certain Laplace transforms in dissipative wave-propagation.
J. Eng. Math. 9 (1975), 261-265.

11. Salzer, H.
Inverse Laplace transforms of osculatory and hyperosculatory interpolation polynomials.
J. Comp. Phys. 20 (1976), 480-491.

12. Schorr, B.
Numerical inversion of a class of characteristic functions.
BIT 15 (1975), 94-102.

13. Singhal, K.; Vlach, J.
Computation of time domain response by numerical inversion of the Laplace transform.
J. Frankl. Inst. 299 (1975), 109-126.

14. Singhal, K.; Vlach, J.; Vlach, M.
Numerical inversion of multidimensional Laplace transform.
Proc. IEEE 63 (1975), 1627-1628.

15. Squire, W.; Trapp, G.
Solution of partial differential equations by numerical inversion of Laplace transform.
Advances in computer methods for partial differential equations (R. Vichnevetsky, editor), Publ. AICA, 1975.

16. Wu, W. T.; Shih, Y P.
Approximations of irrational transfer function $\exp(-s^{1/2})$ by Ritz method.
Int. J. Syst. Sci. 6 (1975), 175-180.

17. Zakian, V.
Properties of I_{MN} and J_{MN} approximants and applications to numerical inversion of Laplace transforms and initial value problems.
J. Math. Anal. and Appl. 50 (1975), 191-222.

INDEX OF AUTHORS

Al-Tikriti, M. N. (1969-1) (1970-4) (1972-5) (1973-4)

Astrakhan, V. I. (1972-1)

Batson, L. E. (1960-1)

Berg, L. (1975-1)

Beskos, D. E. (1975-2)

Bohman, H. (1970-1) (1972-2)

Boley, B. A. (1975-2)

Chen, C. F. (1970-2) (1966-1)

Crump, K. S. (1976-1)

Davies, R. B. (1973-1)

Dillon, E. C. (1973-6)

Drane, R. E. (1973-2)

Fitzgerald, J. J. (1973-6)

Gibilaro, L. G. (1975-3)

Graves, D. J. (1976-4)

Greco, G. (1975-3)

Green, J. S. (1955-1)

Greenberg, D. B. (1970-3)

Hetnarski, R. B. (1975-4)

Holzlöhner, U. (1974-1)

Ichikawa, S. (1972-3) (1973-3)

Iordanov, V. J. (1972-4)

Iorio, G. (1975-3)

Kishima, A. (1972-3) (1973-3)

Levin, D. (1975-5)

Longman, I. M. (1975-6)

McCarthy, T. O. (1975-7)

Mikhailov, M. D. (1972-4)

Miller, M. K. (1966-2)

N-Nagy, F. L. (1969-1) (1970-4) (1972-5) (1972-6)
(1972-7) (1973-4) (1974-4)

Nakhla, M. R. (1973-5)

O'Brien, M. A. (1973-6)

Parker, R. R. (1966-1)

Piessens, R. (1975-8) (1975-9)

Rasmussen, M. L. (1975-10)

Salzer, H. (1975-11)

Schorr, B. (1975-12)

Shih, Y. P. (1975-16)

Sidi, A. (1976-2)

Singhal, K. (1973-5) (1975-13) (1975-14)

Smith, S. J. (1974-2)

Stepanek, E. (1974-3)

Squire, W. (1975-15)
Talbot, A. (1976-3)
Trapp, G. (1975-15)
Uraz, A. (1972-6) (1972-7) 1974-4
Valentine, C. W. (1967-1)
Vaske, B. (1973-7)
Vlach, J. (1973-5) (1975-13) (1975-14)
Vlach, M. (1975-14)
Willöper, J. (1973-7)
Wu, W. T. (1975-16) (1976-4)
Wood, T. (1961-1)
Wynn, P. (1960-2)
Yates, R. E. (1970-2)
Zakian, V. (1975-17) (1976-4)

REFERENCE

1. R. Piessens : *J. Comp. Appl. Math.* 1 (1975), 115-128.
A bibliography on numerical inversion of the Laplace transforms and its applications.