Parameter identification in the numerical inversion of the Laplace transform with real data

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The numerical inversion of the Laplace transform with real data is a severely ill-conditioned problem which is relevant in many applications. Many of the algorithms which have been proposed for its solution depend upon one or more parameters, whose value crucially influence the quality of the results. In this talk, we will take into consideration two inversion algorithms, and we will describe a technique to estimate the parameters upon which they depend, based on a family of error estimates recently introduced [1, 2].

References

[1] C. Brezinski, G. Rodriguez, and S. Seatzu, *Error estimates for linear systems with applications to regularization*, Numer. Algorithms, 49(1-4):85-104, 2008.

[2] C. Brezinski, G. Rodriguez, and S. Seatzu, *Error estimates for the regularization of least squares problems*, Numer. Algorithms, 51(1):61-76, 2009.