

Gauss quadrature and incurable breakdown in the Lanczos algorithm

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The main message of the mismatch theorem [2, Theorem 4.1] is that incurable breakdown in the Lanczos algorithm occurs only when a minimal realization of the transfer function given by the input of the algorithm has been found. In this talk we present how this result can be proved by means of the Gauss quadrature, using results from [1, Chapter 5].

References

- [1] A. Draux, Polynômes orthogonaux formels - Applications, Lecture Notes in Mathematics **974**, Springer-Verlag, Berlin, Heidelberg, New York, 1983.
- [2] D. R. Taylor, Analysis of the look ahead Lanczos algorithm, Ph. D. thesis, Center for Pure and Applied Mathematics, University of California, Berkeley, CA, 1982.