Issues in the Loewner framework for the reduction of parametric and bilinear systems

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The purpose of this talk is to discuss two aspects of the Loewner framework for model reduction. The first has to do with linear parametrized systems and the second with linear as well as bilinear systems. We will show namely how the central concept of shifted Loewner matrices can be generalized in the parametric case and how this leads to an explicit description of reduced parametrized systems. Furthermore the issue of one-sided interpolation and the ensuing parametrizations will be discussed, focusing on bilinear systems.

Reference

A.C. Antoulas, S. Lefteriu and A.C Ionita, A tutorial introduction of the Loewner framework for model reduction, in *Model Reduction and Approximation for Complex Systems*, Edited by P. Benner, A. Cohen, M. Ohlberger, and K. Willcox, Birkhäuser, ISNM Series (2015).