The Loewner framework for model reduction of large-scale systems

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After reviewing the basics of rational Krylov projections and of the Loewner framework, we will present an explicit generalized eigenvalue decomposition of the Loewner pencil. This brings into the picture the sensitivity of the resulting eigenvalues with respect to the choice of the data. This gives a basis for addressing the issue of "good" choices of data, which has been elusive. Several numerical examples will illustrate these sensitivity issues.