Mathematics > Numerical Analysis

Convergence of the Iterative Rational Krylov Algorithm

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The Iterative Rational Krylov Algorithm (IRKA) of [8] is an interpolatory model reduction approach to the optimal $\mathcal{H}_2$ approximation problem. Even though the method has been illustrated to show rapid convergence in various examples, a proof of convergence has not been provided yet. In this note, we show that in the case of state-space symmetric systems, IRKA is a locally convergent fixed point iteration to a local minimum of the underlying $\mathcal{H}_2$ approximation problem.

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