

# Model Reduction of Dynamical Systems

## Exercise 3

22 May 2017

**Problem 1.** *Iterative rational Krylov algorithm*

Implement the iterative rational Krylov algorithm (IRKA) discussed in the course for SISO LTI systems. Use the clamped beam model `beam.mat` [1] for testing. Compare the transfer functions of the original and the reduced-order Hermite interpolant and compute the relative  $\mathcal{H}_2$ -error for different reduced orders.

## References

- [1] <http://slicot.org/20-site/126-benchmark-examples-for-model-reduction>.