

RESTARTED RATIONAL KRYLOV APPROXIMATIONS TO MATRIX FUNCTIONS

I. Moret and **M. Popolizio**
Department of Mathematics
University of Salento
Lecce, Italy
`marina.popolizio@unisalento.it`

Matrix functions are of great importance in lots of applications. This work deals with the numerical approximation of the action of matrix functions frequently occurring in the numerical solution of real life models. This issue is faced by means of rational Krylov methods and, for a wide class of matrices, error estimates are developed. In order to enhance the performance an adaptively restarted version is also proposed. Numerical experiments related to important applications are presented to validate the theoretical results and to better explain the implementation aspects.

References

- [1] I. Moret and M. Popolizio, *Restarted Rational Krylov approximations to matrix functions*, Preprint (2011)