

MODEL ORDER REDUCTION FOR PARAMETRIC EIGENVALUE PROBLEMS

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ABSTRACT. Reduced order modeling is a consolidated and popular research area in the numerical approximation of parametric PDEs.

A naive generalization to elliptic and symmetric eigenvalue problems is working well only for the approximation of the fundamental mode, isolated from the rest of the spectrum [6], or to the simultaneous approximation of a number of eigenvalues in the lowest part of the spectrum and separated from the other ones [7].

We will discuss some of the difficulties arising in particular when eigenvalues intersect for various values of the parameters and we report on some new results obtained in this fascinating field [3, 5, 1, 4, 2].

Keywords: Model order reduction. Numerical approximation of eigenvalue problems. Finite elements. Eigenvalue tracking.

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