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NUMERICAL METHODS FOR EIGENVALUE PROBLEMS ARISING FROM PARTIAL DIFFERENTIAL EQUATIONS

700 - NUMERICAL METHODS AND ALGORITHMS IN SCIENCE AND ENGINEERING

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ABSTRACT

Accurate and precise approximation of eigenvalues and eigenfunctions is of fundamental importance for several problems in science and engineering. The research in this area is pretty active within the mathematical and engineering community; in particular, several progresses have been made recently for what concerns a posteriori estimates and adaptive schemes. In addition to the intrinsic difficulties related to this topic, the presence of varying parameters can make the numerical solution of eigenvalue problems a difficult and challenging task due to possible crossing of eigenvalues.

The aim of this minisymposium is to bring together experts on the numerical approximation of eigenvalue problems arising from partial differential equations.

The topics of interest include, but are not limited to

- Innovative numerical schemes
- A priori error analysis
- A posteriori error analysis and adaptivity
- Solvers for large scale eigenvalue problems
- Parameter dependent and stochastic eigenvalue problems
- Modeling and approximation of application problems in science and engineering