

# Computing the eigenvalues of symmetric H2-matrices by slicing the spectrum

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## Abstract

The computation of eigenvalues of large-scale matrices arising from finite element discretizations has gained significant interest in the last decade (Knyazev et al. in Numerical solution of PDE eigenvalue problems, vol 56. Mathematisches Forschungsinstitut, Oberwolfach, 2013). Here we present an new algorithm based on slicing the spectrum that takes advantage of the rank structure of resolvent matrices in order to compute (Formula presented.) eigenvalues of the generalized symmetric eigenvalue problem in (Formula presented.) operations, where (Formula presented.) is a small constant.

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