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Reviewer number: 013388

Publication: Numer. Math. 79 (1998) 349 - 369

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Short title: Rate of convergence estimates for ... eigenvalue problem

Control number: 1 626 316

Primary classification: 65N25

Secondary classification(s): 73K70

Review text:

A bundle of K infinite rigid tubes is assumed immersed in a cavity containing an incompressible viscous fluid. Small acoustic vibrations of this solid-fluid system are known to be determined by a quadratic eigenvalue problem involving Stokes equations in a plane perpendicular to the tubes. The Lagrange finite elements are chosen as known to lead to the well posed discretization of the problem. The paper is encouraged by several numerical experiments which were carried out in recent years, and offers the rigorous estimate of the rate of convergence of the approximate eigenvalues and of the gap between generalized eigenspaces.

The result is based on several well known theorems on spectral approximation. The proof just amounts to putting the problem into a standard saddlepoint eigenvalue form for a certain compact but non-selfadjoint operator T, and to the subsequent verification of hypotheses of the two relevant theorems.

Interesting open questions are related to the large-K behaviour of the spectrum.