NUMERICAL CALCULATION OF THE ESSENTIAL SPECTRUM OF A LAPLACIAN

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ABSTRACT. We consider a bounded Rooms and Passages region Ω on which the negative Neumann laplacian (restricted to the orthogonal complement of the constant functions) does not have a compact inverse and hence has an essential spectrum. We try to understand how such spectra may be approximated by results from a sequence of finite-dimensional problems. Approximations to this laplacian on finite-dimensional structures have only eigenvalues for spectra. Our strategy is to attempt to discern how results on increasingly better approximating structures point to spectral results in the limiting case.