
James Brannick
**An adaptive multilevel method for solving elliptic
eigenvalue problems**

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We introduce an adaptive multilevel method for solving elliptic eigen-problems on surfaces. Using techniques from adaptive finite element methods, Rayleigh quotient minimization (RQMG) and bootstrap algebraic multigrid we design an efficient algorithm for computing any eigenpair. Numerical results of the proposed approach applied to the Laplace-Beltrami eigen-problem on the sphere are presented.