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Harold Gerard Donnelly*, 150 North University Street, West Lafayette, IN 47907.

Concentration properties for eigenfunctions of the Laplacian.

Eigenfunctions of the Laplace operator are considered on compact Riemannian manifolds. These eigenfunctions are said to concentrate if their supremum norm is much larger than their L^2 norm. This topic is understood best for manifolds admitting continuous groups of isometries. In the complementary case of manifolds with ergodic geodesic flow, the focus is on the construction of examples. (Received January 10, 2006)