

Abstract

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Neumann Domains

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The nodal set of a Laplacian eigenfunction forms a partition of the underlying manifold. An alternative partition, based on the gradient field of the eigenfunction, is via the so called Neumann domains. A Neumann domain of an eigenfunction is a connected component of the intersection between the stable manifold of a certain minimum and the unstable manifold of a certain maximum. We introduce this subject, discuss various properties of Neumann domains and point out the similarities and differences between nodal domains and Neumann domains.