PDE, Complex Analysis and Differential Geometry Seminar

UNIVERSITY OF NOTRE DAME
Department of Mathematics

Speaker: Alan Lindsay
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Tuesday, December 3, 2013
11:00 AM
258 Hurley Hall

Title: Eigenvalues of clamped plates with small holes

Abstract:

In this talk I will discuss some recent work on the modes of vibration of a punctured plate. The focus is on eigenvalues of the Bi-Laplacian in bounded two dimensional regions which are perturbed with small holes of radius ϵ. These holes represent defects in the plate whose vibrations are being considered. The main goal is to characterize the limiting behavior of the eigenvalues as the hole radius tends to zero. The limiting problem itself has some unexpected properties which contrast strongly with the standard spectral results for the Laplacian.