

DG/PDE/IP SEMINAR

WEDNESDAY, MAY 21, 2008

PADEL FORD C-36

3:50-5PM

Compressive wave computation

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This talk will present a method for accurately computing the solution of a wave equation by decomposing it onto a largely incomplete set of eigenfunctions of the Helmholtz operator, chosen at random. The recovery method is the ℓ_1 minimization of compressed sensing. The guarantees of success are based on three estimates for the wave equation, namely 1) an L^1 estimate, 2) a result of extension of the eigenfunctions, and 3) an eigenvalue gap estimate. These estimates hold in the one-dimensional case when the medium has small bounded variation. In practice, this “compressive” strategy is a natural way of parallelizing wave simulations for memory-intensive applications. Joint work with Gabriel Peyre.

For more information about this seminar, visit the DG/PDE Seminar Web page (from the Math Department home page, www.math.washington.edu, follow the link **Seminars, Colloquia, and Conferences**).

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