Applied Mathematics

McGill Applied Mathematics Seminar

March. 19, 2007, 2:35 pm Monday
At McGill, Burnside Hall 1205

"A Multigrid Algorithm For A First-Kind Boundary Integral Equation From Acoustics."

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Coffee and refreshments will be served after the seminar

Abstract:

Boundary Integral Equation methods have long been used in the study of acoustic scattering theory. For exterior problems they effectively reduce the infinite computational domain to the bounded surface of the scattering object. However, the non-local behavior of the boundary operators results in dense linear systems.

In this talk, I will present an efficient multigrid preconditioning strategy for low to moderate wavenumbers, which uses a smoothing procedure suitable for pseudodifferential operators of order -1.
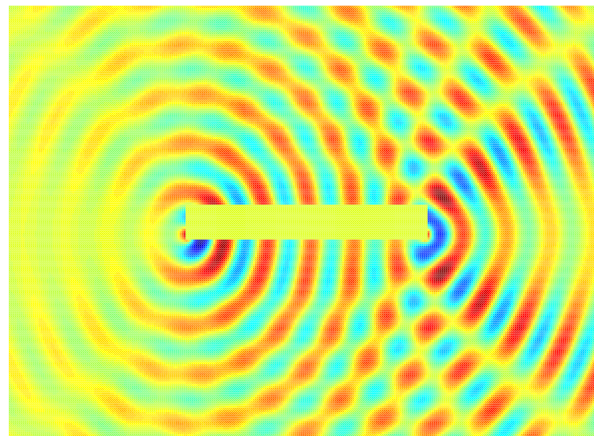
Plane-wave scattering from an obstacle with corners.