Department of Mathematical Sciences

Spring 2016 Colloquium Series

Friday, March 18, 2016 at 3pm in Bell Hall 143

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Some Robust Iterative Methods for the Helmholtz Equation

We discuss in this talk iterative methods based on domain decomposition algorithms to deal with the Helmholtz equation at mid and high-frequency regimes. We will show how to use adequate transmission conditions, based on approximations of the Dirichlet to Neumann operator, to improve the convergence of the iterative procedures. We will present an algorithm coupling finite and boundary element methods. If time allows it, we will also discuss some high-frequency integral equation solvers in the context of multiple scattering problems.

