Applied Mathematics

Joint McGill Analysis and Applied Mathematics Seminar

Oct. 22, 2007, 2:35 pm Monday
At McGill, Burnside Hall 1205

''Boundary Element Methods for the Last 30 Years''

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Coffee and refreshments will be served after the seminar

Abstract: Variational methods for boundary integral equations deal with weak formulations of the equations. Boundary element methods are numerical schemes for seeking approximate weak solutions of the corresponding boundary variational equations in finite- dimensional subspaces of the Sobolev spaces with special basis functions, the so-called boundary elements. This lecture gives an overview of the method from both theoretical and numerical point of view. It summarizes the main results obtained by the author and his collaborators over the last 30 years. Fundamental theory and various applications will be illustrated through simple examples. Some numerical experiments in elasticity as well as in fluid mechanics will be included to demonstrate the efficiency of the methods.
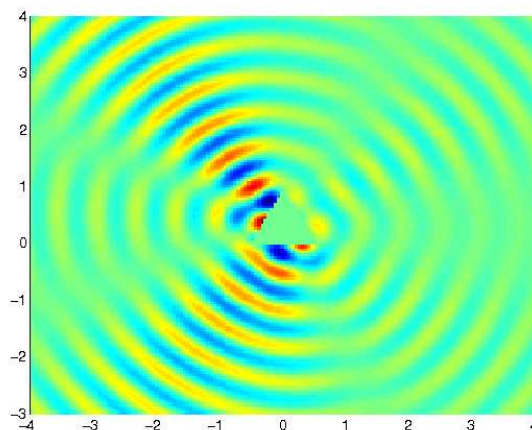
BEM computation of plane wave scattering from triangle