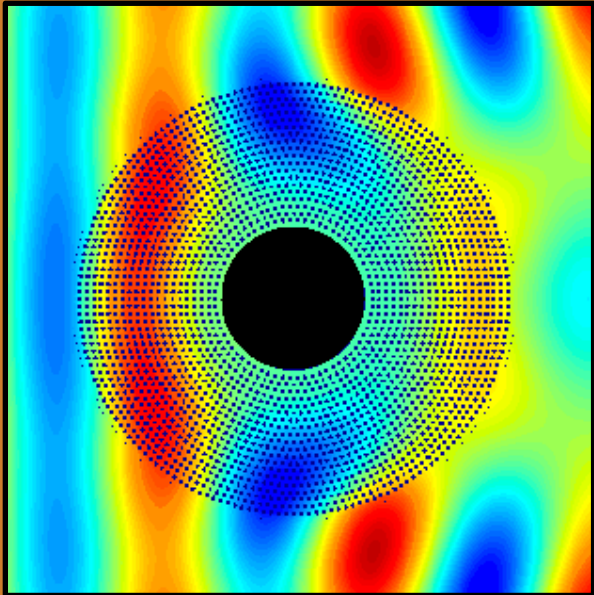


UCCS Department of Mathematics

Math Colloquium Series

EDWIN JIMENEZ

COMPUTING & MATHEMATICAL SCIENCES, CALTECH



DATE:

OCTOBER 31, 2019

TIME:

12:30PM-1:30PM

(REFRESHMENTS AT 12:15PM)

LOCATION:

UNIV. CENTER #303

High-order Numerical Methods for Boundary Integral Equations with Applications to Acoustic and Electromagnetic Scattering

Abstract: The boundary-value problems of time-harmonic acoustic and electromagnetic wave reflection and transmission can be formulated in terms of integral equations over scattering surface boundaries. The singular kernels associated with boundary integral operators must be evaluated carefully if a numerical algorithm is to achieve high-order convergence. We will present numerical algorithms that exhibit both high-order convergence for singular operators and, at the same time, reduce the cost of distant regular interactions. We demonstrate our numerical methods with applications to acoustics, electromagnetics, and multi-objective optimization subject to integral equation constraints.

For more information please contact the UCCS Math Department at
(719) 255-3311 www.uccs.edu/math