

1077-65-17

**David P Nicholls** and **Jun Niu\***, jniu3@uic.edu. *A Field Expansions Method for Acoustic Scattering by a Doubly Crossed Multilayered Media.*

In this talk we discuss the generalization to three dimensions of a Field Expansion method for the numerical simulation of acoustic scattering by crossed diffraction gratings. The method is an extension of Malcolm and Nicholls' recent work in two dimensions, and Bruno and Reitich's algorithm to multiple layers. We give full details of the algorithm and display numerical results which show the efficiency and accuracy of our new method. (Received May 16, 2011)