



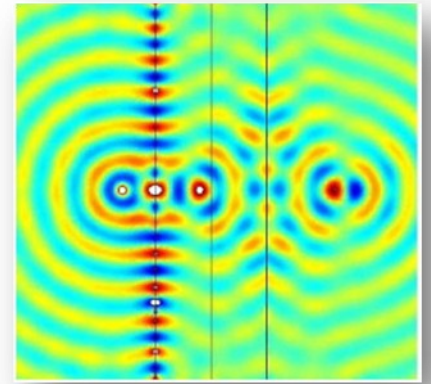
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## Interesting challenges in inverse scattering and superresolution imaging: can metamaterials help?



Dr. Michael A. Fiddy

In this talk some of the problems associated with imaging strongly scattering objects, especially with high resolution, will be reviewed. Fundamental limitations imposed by the number of degrees of freedom play a pivotal role. The role of subwavelength scale features in a scattering object and the generation of evanescent waves will be examined, and their near-field capture discussed. The severe limitations of a so-called metamaterial “perfect lens” which can transfer such information, especially from a 3D object to a detector is investigated. A role for less-than-perfect metamaterials in superresolution might be emerging however, and some justifications for why will be given.

**4PM, WEDNESDAY, MARCH 5, 2014**

**Carlson Auditorium, Center for Imaging Science (Bldg. 76)**