Center for Scientific Computation
And Mathematical Modeling

University of Maryland, College Park

Program Announcement

Electromagnetic Metamaterials and their Approximations: Practical and Theoretical Aspects

September 22-25, 2008

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SCIENTIFIC BACKGROUND

The idea behind this workshop is to bring together selected (electrical) engineers, applied physicists and mathematicians whose work has already had, or could very possibly in the future have implications as far as metamaterials and cloaking are concerned.

Among electrical engineers and applied physicists this would of course involve people who have actual experience with the "manufacturing" of such electromagnetic metamaterials. From the mathematical side it would naturally involve people whose past work has had significant impact on electromagnetic imaging problems, and the associated reconstruction limitations. Very interesting (and still largely open) areas of research involve (1) cloaking "at all frequencies", and not just for time-harmonic Maxwell, (2) the construction of efficient approximate cloakings, and (3) a deeper understanding of the efficient "manufacture" of such cloakings. Even though the above discussion centers on cloaking and metamaterials obtained by mapping techniques, it would be quite natural to include other closely related subjects.

Two subjects that come to mind are (1) materials with negative index of refraction and their use in cloakings, and (2) metamaterials designed to create other optical or electromagnetic "illusions".

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