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MATHEMATIKKOLLOQUIUM

Das Institut für Mathematik lädt zu folgendem Vortrag ein:

Alexander Ramm

Mathematics Department, Kansas State University, USA

Many-body wave scattering by small bodies and creating materials with a desired refraction coefficient

Many-body scattering problem is solved asymptotically when the size of the particles tends to zero and the number of the particles tends to infinity.
A method is given for calculation of the number of small particles and their boundary impedances such that embedding of these particles in a bounded domain, filled with known material, results in creating a new material with a desired refraction coefficient.
The new material may be created so that it has negative refraction, that is, the group velocity in this material is directed opposite to the phase velocity.
Another possible application consists of creating the new material with some desired wave-focusing properies. For example, one can create a new material which scatters plane wave mostly in a fixed given solid angle. In this application it is assumed that the incident plane wave has a fixed frequency and a fixed incident direction.
An inverse scattering problem with scattering data given at a fixed wave number and at a fixed incident direction is formulated and solved.
Acoustic and electromagnetic (EM) wave scattering problems are discussed.

Zeit: **Mittwoch, den 10. Juni 2009 um 17:15 Uhr**

Ort: **Victor-Franz-Hess Haus, Technikerstraße 25, HS F**

Alexander Ostermann

Gäste sind herzlich willkommen!