On Uniqueness of an Inverse Problem for the Time-harmonic Maxwell Equations

(Day 2 - Talk 3)

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The inverse boundary value problem for the time-harmonic Maxwell equations is a nonlinear problem to determine electromagnetic parameters of the medium, namely the magnetic permeability, the electric permittivity and the conductivity, on a bounded domain using the measurements of the electromagnetic fields on the boundary of the domain. I will present both the boundary uniqueness and interior uniqueness of the parameters, where we assume that the *unknown* parameters are described by continuously dierentiable functions. The key ingredient in proving the uniqueness is the complex geometrical optics (CGO) solutions.

This is a joint work with Dr. Pedro Caro.