

The linear sampling method for the inverse electromagnetic scattering by a partially coated bi-periodic structure

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In this talk, we consider the inverse problem of recovering a doubly periodic Lipschitz structure through the measurement of the scattered field above the structure produced by point sources lying above the structure. We first use a variational method to establish the well-posedness of the direct problem and then prove the uniqueness of the inverse problem by extending Isakov's method. A periodic version of the linear sampling method is developed to reconstruct the doubly periodic structure using the near field data. Numerical results are also presented to illustrate the efficiency of the method.