

Source identification in low-frequency electromagnetism

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Abstract

Source identification in low-frequency electromagnetism We analyze a source identification problem for the steady-state Maxwell's equation

equation $\beta \mathbf{E} + \nabla \times (\mu^{-1} \nabla \times \mathbf{E}) = \mathbf{J}$ in Ω , not a

where β is a time-scaled conductivity, \mathbf{E} stands for the electric field and \mathbf{J} is the unknown source term. The tangential components of the magnetic and the electric field are measured on the boundary of the Lipschitz polyhedron Ω . We have to deal with a low-regularity of Maxwell's system for such a domain. A primal-dual approach is employed to tackle the problem.