Dipl.-Math. Lilian Arnold

Lehrstuhl für Mathematik IX (Wissenschaftliches Rechnen)
der Universität Würzburg

Identifiability of a Conductor by Electromagnetic Measurements

Transient excitation currents generate electromagnetic fields which, in turn, induce electric currents in proximal conductors. In low-frequency applications, the generated electric field can be described by the parabolic-elliptic eddy current equation, which is an approximation of Maxwell's equations. We start with the direct problem of calculating the electromagnetic field from knowledge of the conductor and the surrounded medium. We present a unified variational theory and study existence and uniqueness of solutions. Based on this, we turn to the inverse problem of locating a conducting object by measurements of the electromagnetic field. We introduce a measurement operator and discuss, if and how we can identify the conducting domain from knowledge of this operator.

Ort: Raum 30.02.003 (2. Stock) (Mathegeb. 30 West) Zeit: Montag, 09.01.2012, um 16.15 Uhr

Zu diesem Vortrag laden wir Sie herzlich ein.

gez. Prof. Dr. Alfio Borzi

gez. Prof. Dr. Bastian von Harrach