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Integral Equation Methods for Electrical Impedance Tomography

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Electrical Impedance Tomography (EIT) is a non-invasive, low cost technology developed to image the electrical conductivity distribution of a conductive medium. The technique works by performing simultaneous measurements of electric currents and voltages on the boundary of an object. These are the data used by an image reconstruction algorithm to determine the electrical conductivity distribution within the object. Different materials display different electrical properties, so a map of the internal conductivity can be used to infer the internal structure of the object under consideration. EIT can therefore be used as a method of industrial, geophysical and medical imaging. In this talk we present integral equation reconstruction methods suitable for smooth conductivity distributions.

Auteur principal: Dr SEBU, CRISTIANA (OXFORD BROOKES UNIVERSITY)

Orateur: Dr SEBU, CRISTIANA (OXFORD BROOKES UNIVERSITY)

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Classification de thématique: Inverse problem in Appplied Mathematics