Stability and Numerical Reconstruction of Inclusions in a Conductor Body

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We would like to study the inverse problem of determining an inclusion in an electrical conductor by electrostatic boundary measurements. In particular we want to analyse a body that contains a region whose electrical conductivity is different from the conductivity of the surrounding material. This region may represent a unknown damage part of the body and the goal is to detect such a part. The aim of this work is to provide some stability estimates, that is how the unknown inclusion depends from the boundary data, and provide some numerical reconstruction to locate the shape and estimate the size of the defect. More specifically we would like to consider anisotropic conductivities when only a portion of the boundary is available to perform our measurements.

References

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