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Partial Data Inverse Problems for the Neumann-to-Dirichlet map

Electrical impedance tomography is an imaging method which seeks to recover the conductivity of an object by applying electrical currents to the boundary of the object and measuring the resulting potentials there. The mathematical challenge is to reconstruct the conductivity from knowledge of this current-to-voltage or Neumann-to-Dirichlet map. Ideally one would like to be able to show that we can restrict the measurements to a subset of the boundary and still determine the conductivity. In this talk I will give a brief introduction to this sort of partial data problem, and describe a recent result proving that partial boundary measurements of the Neumann-to-Dirichlet map on certain subsets do indeed uniquely determine the conductivity.