1027-35-59 **Alexandru Tamasan*** (tamasan@math.ucf.edu), Dept. of Mathematics, University of Central Florida, 4000 Central Florida Blvd., Orlando, FL, and **Adrian Nachman** and **Alexander Timonov**. *Conductivity Imaging with a Single Measurement of Boundary and Interior Data.* Preliminary report.

We consider the problem of imaging conductivity from knowledge of current and voltage on a part of the boundary and the magnitude of the current density field inside. The internal data is obtained from magnetic resonance measurements. In two dimensions we solve the Cauchy problem with partial partial data for a quasilinear degenerate elliptic equation and show that the conductivity can be recovered in the regions spanned by the characteristics. We give necessary and sufficient conditions on the Dirichlet Data to guarantee unique recovery throughout the domain. (Received February 12, 2007)