1086-49-2940   **Amir Moradifam*** (`am3937@columbia.edu`), Columbia University, New York, NY, and **Adrian Nachman**, **Alexandru Tamasan** and **Alexandre Timonov**. *Conductivity imaging from minimal interior data.*

We consider the problem of recovering conductivity outside some perfectly conducting inclusions or insulating inclusions from the interior measurement of the magnitude of one current density field $|J|$. We show that the conductivity outside the inclusions, and the shape and position of the inclusions are uniquely determined by the magnitude of the current generated by imposing a given boundary voltage. We will also present a convergent numerical algorithm for the corresponding infinite dimensional L^1 minimization problem. This is a joint work with A. Nachman, A. Tamasan, and A. Timonov. (Received September 26, 2012)