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Peter A Muller* (mullerp@rowan.edu). *Electrical Impedance Tomography: Two Direct Image Reconstruction Methods.*

Electrical impedance tomography (EIT) is an imaging modality that measures currents and voltages on the surface of a body to image the electrical conductivity within the body. Image reconstruction in EIT is a severely ill-posed, nonlinear inverse problem. In this talk, I will present two direct reconstruction methods based on complex geometrical optics solutions: Calderón's method and Nachman's D-bar method. Both methods provide a point-wise reconstruction of the image. Calderón's method is a linearized approach while the D-bar method solves the fully non-linear inverse problem. I will present both methods and improvements to them that address clinical concerns for this medical imaging technique. (Received September 24, 2018)