

# Electrical Impedance Imaging Algorithms

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## **Abstract**

Electrical Impedance Imaging systems apply currents to the surface of a body, measure the resulting voltages, and reconstruct and display approximations to the electrical conductivity, permittivity, and magnetic permeability distributions inside the body. We describe some of the algorithms that we have used to reconstruct these electrical properties from this measured approximation to a Neumann to Dirichlet map for Maxwell's equations. Images and movies will be shown of heart and lung function. Electrical impedance spectra of normal and cancerous breasts will also be shown.