

## **Electrical Impedance Imaging integrated into MRI system**

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Magnetic Resonance Electrical Impedance Tomography (MREIT) is a EIT imaging technique integrated into MRI system. MREIT was designed to overcome the severe ill-posedness of EIT due to its inherent mathematical nature. Based on the CDI (Current Density Imaging) technique originated by Joy et. al., we derive a new mathematical model and its image reconstruction algorithm called J-substitution algorithm. In computer simulations, this algorithm produces high-resolution cross-sectional resistivity images. In this introductory talk, we will explain how the MREIT-mathematical model is derived and its numerical algorithm. We will also explain advantages and disadvantages of MREIT comparing with EIT.