

## **Monotonicity-based methods for elliptic inverse coefficient problems**

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Some newly emerging imaging methods lead to the inverse problem of determining one or several coefficient function(s) in an elliptic partial differential equation from (partial) knowledge of its solutions. In particular let us mention electrical impedance tomography (EIT), where electrical currents are driven through a patient to image its interior. The mathematical challenges behind such inverse coefficient problems reach from theoretical uniqueness questions to the construction of convergent numerical algorithms and stability issues. In this talk, we will describe recent advances on these problems that are based on monotonicity relations with respect to matrix definiteness and the concept of localized potentials.