

Monotonicity and Convexity in Inverse Coefficient Problems

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Several applications in medical imaging and non-destructive material testing lead to inverse elliptic coefficient problems, where an unknown coefficient function in an elliptic PDE is to be determined from partial knowledge of its solutions. This is usually a highly non-linear ill-posed inverse problem, for which unique reconstructability results, stability and resolution estimates and global convergence of numerical methods are very hard to achieve. In this talk we will review some recent results on Loewner Monotonicity and Convexity that may help in overcoming these issues.

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