

A Tikhonov regularization for the inverse nodal problem for p -Laplacian

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Abstract

We apply the Tikhonov regularization method to reconstruct potentials of a Sturm-Liouville problem as well as a p -Laplacian eigenvalue problem using only zeros of one eigenfunction. This method is stable and there are explicit error bounds for the reconstruction. This is an inverse nodal problem on a class of nonlinear equations (when $p \neq 2$).

This is joint work with Xinfu Chen and Yan-Hsiou Cheng.