

1096-49-1867

Brian C Winkler* (bcw9368@rit.edu). *Gradient and Extragradient Methods for Elliptic Inverse Problems with an Application to the Tumor Identification Problem*. Preliminary report.

This talk examines the application and comparison of gradient-based and extragradient methods for the solution of elliptic inverse problems within a general optimization framework. We consider the application of these methods to a particular inverse problem in linear elasticity: identifying tumor locations within the soft tissue of the human body. Detailed implementation issues will be covered along with thorough performance analyses for a variety of methods and differing approaches, including the output least squares (OLS) and modified output least squares (MOLS) functionals. The results of several numerical experiments showing the recovery of variable parameters will also be presented. (Received September 16, 2013)