Sensitivity Analysis of the Tikhonov Regularization to the Initial Guess in the Elastography Inverse Problem

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Elastography is a method to determine the elasticity properties of the soft tissue. The main part of this method is the solution of the inverse elasticity problem. To solve the inverse problem using regularization method is unavoidable. In this study Gauss- newton method and Tikhonov regularization are used to solve the inverse problem. Sensitivity analysis of the solution to the initial guess showed that selection the close initial guess to the final goal cause to semi-convergence manner. In this situation choice of stopping criterion will be very important.

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