A Method of Biological Tissues Elasticity Reconstruction Using Magnetic Resonance Elastography Measurements

Hyundae Lee

,

Abstract

Magnetic resonance elastography (MRE) is an approach to measuring material properties using external vibration in which the internal displacement measurements are made with magnetic resonance. A variety of simple methods have been designed to recover mechanical properties by inverting the displacement data. Currently, the remaining problems with all of these methods are that in general the homogeneous Helmholtz equation is used and therefore it fails at interfaces between tissues of different properties. The purpose of this talk is to propose a new method for reconstructing both the location, the shape and the shear modulus of a small anomaly with elastic parameters different from the background ones using internal displacement measurements. (joint work with H. Ammari, P. Garapon, and H. Kang).