

# Shear modulus reconstruction by low-frequency harmonic vibration

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## ABSTRACT

We propose a reconstruction method for visualizing the elastic shear modulus (or Young's modulus) of tissues in-vivo from ultrasonic or MR measurement of the interior time-harmonic motion that is generated by a low frequency sinusoidal vibration along skin surface. In elastography, conventional inversion methods of finding shear modulus have fundamental shortcomings in recovering strongly heterogeneous mediums and in dealing with measurement noise. In this talk, we present an iterative reconstruction formula for the shear modulus based on a decomposition of the stress wave vector, which overcomes drawbacks by using conventional inversion methods.