



Automated Evaluation of Ultrasonic Elasticity Images

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing a novel quantitative method for automatically evaluating the quality of images used in ultrasonic elasticity imaging.

Overview

Ultrasound-based elasticity imaging uses signals from conventional diagnostic ultrasound systems to show the mechanical properties of tissue (e.g., stiffness or Poisson's ratio). In quasi-static elasticity imaging, images of the tissue in different states of deformation are compared to measure the amount of strain the tissue experiences; however, manual deformation of the tissue under a typical clinical setting with freehand scanning requires considerable operator skill to maintain high image quality.

The Invention

UW-Madison researchers have developed a novel quantitative method for automatically evaluating the quality of images used in ultrasonic elasticity imaging. The method uses an empirical equation to combine different types of image quality measurements into a single quantitative descriptor of overall performance. For an operator manually deforming tissue, it may be used to provide a real-time corrective signal to improve the quality of the data acquired. It may also be used to automatically select images for averaging or animation.

Applications

- Evaluation of elasticity images
- Research and product development as a basis for testing strain image formation algorithms

Key Benefits

- Rapid—provides near real-time operator feedback or automatic culling of poor images
- Offers a single measure of image quality that can be evaluated against a threshold
- Improves acquisition of elasticity image data
- Provides elasticity images with improved signal-to-noise ratios
- Provides an objective method for distinguishing between “good” and “better” elasticity images in a clinical setting
- Can be used with standard ultrasonic acquisition systems

Stage of Development

This method has been integrated into an existing program for strain image processing and successfully tested with data acquired from phantoms and from biological tissue. We use cookies to enhance your browsing experience and improve our marketing efforts. By continuing to browse without changing your browser settings to block or delete cookies, you agree to the storing of cookies and related technologies on your device. [See our privacy policy.](#)

Additional Information

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For More Information About the Inventors

- [Timothy Hall](#)

Related Intellectual Property

- [View Continuation Patent in PDF format.](#)

Tech Fields

- [Medical Imaging : Ultrasound](#)

For current licensing status, please contact Jeanine Burmania at jeanine@warf.org or 608-960-9846

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