Abstract

Use of mathematical interpolation in Digital Signal Processing applications often seems to be a remarkable solution when applied for noise reduction. In the last two decades advancement in the Elasticity imaging of tissue is worth mentioning. Two dimensional spline technique for generating Elastograms is fairly a new approach for generating ultrasonic Elastograms. In the way of analyzing imaging modalities generally three parameters are taken into account resolution, SNRe and CNRe. In ultrasound elastography spline based method for axial strain estimation is well-established in the literature. In this paper we have shown the possibilities of 2D spline which mainly works on a plate of experimental data considering both axial and the lateral directions. We have also analyzed the improvement of performance while utilizing this method comparing with other well-established techniques such as simple 1D Smoothing Spline and the Adaptive Strain Estimation technique.

References

- Ophir, J., I. Cespedes, Ponnekanti, H., Yazdi, Y., & Li, X. “Elastography: a quantitative method for imaging the elasticity of biological tissues.” Ultrasonic imaging,
Intervention, 2009.

Index Terms

Computer Science
Image Processing

Keywords

Strain estimation  Smoothing spline  Resolution  Performance parameter  Interpolation