Public Abstract
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Title:A MODELING APPROACH TO ULTRASOUND EVALUATION OF MATERIAL PROPERTIES

A mechanical network model was developed to represent a viscoelastic material which allows the mechanical properties of the material to be extracted from ultrasound measurements. The results showed that the model could capture the major dynamics of transmitted ultrasonic waves and allow repeatable estimation of the properties. The estimated viscoelastic properties reflected known facts about the materials tested and could be used to differentiate biological materials. The viscoelastic properties determined from the model-based ultrasound (MBUS) measurements had positive correlations to those conventionally measured. The model parameters were also able to predict the sensory crispness of apples.