

MICHIGAN STATE UNIVERSITY  
Department of Statistics and Probability

A Workshop on Future Directions in  
Fractional Calculus Research and Applications

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How the Fractional Order Impedance Models  
Influenced Lung Function Device Trends

**Abstract**

This presentation gives a systematic overview of models describing viscoelastic properties in respiratory tissue during tidal breathing and afferent lung function testing devices. A technological development timeline is given and current state of art is evaluated with clinical data in healthy subjects and chronic obstructive pulmonary disease diagnosed patients. Further technological and methodological improvements are suggested.