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Mechanics of Phonation



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ABSTRACT:

The fundamental processes of phonation occur in the larynx as air flows from the lungs and causes the vocal folds to vibrate. This flow-structure interaction problem is highly nonlinear due to the nonlinear properties of the tissue, the contact interaction and adhesion between the vocal folds during the vocal fold closing phase. Both normal to over-use and life style choices are shown to affect the problem. I will demonstrate several key finding and discuss future challenges in the field.

BIOGRAPHY:

Dr. Thomas Siegmund is Professor of Mechanical Engineering at Purdue University. His research interests are in creating new material functionalities through material architectures, in fracture and fatigue problems, as well as in biomechanics of osteoporosis. Dr. Siegmund has published over 100 refereed journal papers and he holds several patents. He served as NSF Program Director for Mechanics of Materials and Structures, and currently is the President of the Society of Engineering Science. His research is featured on his lab's website www.mymech.org.