

1056-34-1174

J. Regan Beckham* (rbeckham@uttyler.edu), Department of Mathematics, 3900 University Blvd., Tyler, TX 75799. *Modeling of Electrostatic-Elastic Membrane Systems Motivated by MEMS Devices.*

Electrostatic-elastic membrane systems are used in microelectromechanicalsystems (MEMS) devices as a means of locomotion. We consider a number of variants to the standard capacitive model. In each case a mathematical model is formulated, analyzed, and solved numerically. Due to the scaling properties of the electric field, it is possible to perform macro-scale experiments to compare with results obtained from the mathematical model. (Received September 21, 2009)