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**Yujin Guo\*** (yjguo@math.umn.edu), School of Math., University of Minnesota, 127 Vincent Hall, 206 Church St. SE, Minneapolis, MN 55455. *Singular Wave Equations Arising in Electrostatic MEMS.*

We discuss various qualitative properties of dynamical and stationary solutions of a singular wave equation with an inverse-square type nonlinearity. Such an equation models a simple electrostatic Micro-Electromechanical System (MEMS) device, which consists of a thin dielectric elastic membrane with boundary supported above a rigid ground plate. When a voltage is applied, the membrane deflects towards the ground plate, and a snap-through (i.e. quenching) may occur when the applied voltage exceeds a certain critical value. (Received January 19, 2011)