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Yujin Guo*, 127 Vincent Hall, 206 Church St. S.E., Minneapolis, MN 55455. *Partial Differential Equations Arising from Electrostatic MEMS.*

We introduce a nonlinear evolution equation with an inverse-square type nonlinearity, which describes the dynamical deflection of a simple electrostatic Micro-Electromechanical System (MEMS) device. In the second-order parabolic case, various qualitative properties of solutions are discussed. (Received February 25, 2009)