

Fractal pull-in instability for a micro-electromechanical device with a current-carrying conductor

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Abstract

Pull-in effect always occurs in a micro-electromechanical system, and its pull-in analysis is essential for the normal operation. This paper aims at studying the environment effect on the pull-in instability, especially the nano/micro particles in air. A fractal model is established using a fractal derivative, and the pull-in instability can be converted into a novel state of pull-in stability when the fractal dimension tends to be very small.

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figures/Figure-1/Figure-1-eps-converted-to.pdf

figures/Figure-2/Figure-2-eps-converted-to.pdf





