

Abstract Submitted  
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**The Escape Problem in a Classical Field Theory With Two Coupled Fields and its Application to Monovalent Metallic Nanowires** LAN GONG, Department of Physics, New York University, DANIEL STEIN, Department of Physics and Courant Institute of Mathematical Science, New York University — We introduced and analyzed a system of two coupled partial differential equations with external noise. The equations are constructed to model transitions of monovalent metallic nanowires with non-axisymmetric intermediate or end states, but also have more general applicability. They provide a rare example of a system for which an exact solution of nonuniform stationary states can be found. We have also explored the escape dynamics numerically, using the String Method, a relaxational technique. We find two kinds of transitions in activation behavior as we tune different parameters in our model, such as the interval length on which the fields are defined, and the bending coefficients of the fields. We discuss how these results apply to real nanowires.

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