

Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Approximate Approach to Multi-Dimensional Tunneling in Solids

MARIO ANCONA, Naval Research Laboratory — For reasons of tractability elastic tunneling within or from solids is typically treated with one-dimensional or quasi-one-dimensional approximations. In this presentation methods for analyzing multi-dimensional solid-state tunneling that maintain physical fidelity yet remain computationally efficient are discussed. After a brief review of the microscopic EBK approach, the discussion focuses on a macroscopic form of quantum transport theory whose equations are most easily understood via analogies with gas dynamics and electron optics. Various analytical implications of the theory are derived and numerical illustrations are provided.

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Date submitted: 30 Nov 2005

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