

Abstract Submitted
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Time-Domain Spin Filter in Resonant Tunneling Structures

ROBERTO ROMO, Department of Physics and Astronomy and Nanoscale Quantum Phenomena Institute, Ohio University, SERGIO ULLOA — Solutions of the time-dependent Schrödinger's equation are used to explore the spin-dependent tunneling in resonant structures from a dynamical point of view. The transmission of the spin-polarized electrons incident from the left occurs in such a way that they appear at the right edge of the system at time scales that depend on their particular spin orientation. This effect provides us with a mechanism for spin filtering in the time domain.

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