

Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Spin-filtering by field dependent resonant tunneling¹ ZORAN RISTIVOJEVIC, Argonne National Laboratory — We consider theoretically transport in a spinfull one-channel interacting quantum wire placed in an external magnetic field. For the case of two point-like impurities embedded in the wire, under a small voltage bias the spin-polarized current occurs at special points in the parameter space, tunable by a single parameter. At sufficiently low temperatures complete spin-polarization may be achieved, provided repulsive interaction between electrons is not too strong.

¹Work supported by the U.S. DOE, Office of Science, under Contract No. DE-AC02-06CH11357.

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Date submitted: 16 Nov 2009

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