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Current induced magnetization dynamics in spin-orbit coupled thin film ferromagnets[1] DMYTRO PESIN, ALLAN MACDONALD, The University of Texas at Austin, Austin, TX — We consider the effect of an in-plane current on the magnetization dynamics of a two-dimensional spin-orbit coupled nanoscale itinerant ferromagnet. By solving the appropriate kinetic equation for an itinerant electron ferromagnet, we show that Rashba spin-orbit interaction provides transport currents with a switching action, as observed in a recent experiment (I. M. Miron *et al.*, Nature 476, 189 (2011)). The dependence of the effective switching field on the magnitude and direction of an external magnetic field in our theory agrees well with experiment. We comment on the possibility of finding materials in which this spin-orbit switching effect can be achieved at moderate current densities

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