

Abstract Submitted
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Josephson Junction as a Magnetic Switch LIUFEI CAI, CUNY-Lehman College and Graduate Center, EUGENE CHUDNOVSKY, CUNY Lehman College — We study electromagnetic interaction of a nanomagnet with a weak superconducting link. Equations that govern coupled dynamics of the two systems are derived and investigated numerically. We show that despite very weak magnetic field generated by the weak link, a time-dependent bias voltage applied to the link can initiate a non-linear dynamics of the nanomagnet that leads to the reversal of its magnetic moment. We also consider quantum problem in which a nanomagnet interacting with a weak link is treated as a two-state spin system due to quantum tunneling between spin-up and spin-down states. L. Cai and E. M. Chudnovsky, Phys. Rev B **82**, 104429 (2010).

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