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A new magnetization-reversal strategy for Stoner particles XIANGRONG WANG, ZHOUZHOU SUN, The Hong Kong University of Science and Technology — A new strategy is proposed aimed at substantially reducing the minimal magnetization switching field for a Stoner particle. Unlike the normal method of applying a static magnetic field which must be larger than the magnetic anisotropy, a much weaker field, proportional to the damping constant in the weak damping regime, can be used to switch the magnetization from one state to another if the field is along the motion of the magnetization. The concept is to constantly supply energy to the particle from the time-dependent magnetic field to allow the particle to climb over the potential barrier between the initial and the target states.

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