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Electromechanical Switching of the Magnetization in Nanomagnets[1] REEM JAAFAR, City University of New York - LaGuardia Community College, EUGENE CHUDNOVSKY, City University of New York - Lehman College — We demonstrate the possibility of switching the magnetization by a mechanical kick generated by, e.g., a pulse of the electric field applied to a multiferroic nanoparticle or to a piezoelectric coupled to a magnetic particle that is free to rotate. The effect is based upon the observation that the mechanical rotation is equivalent to the magnetic field in the coordinate frame of the particle. This removes the symmetry argument on the way of reversing the magnetic moment by the electric field as the latter is used to generate rotation which provides the effective magnetic field acting on the magnetic moment. Analytical and numerical results will be reported.

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