

Abstract Submitted
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Dynamical magnetizations of nanomagnets with strong magnetic anisotropy BANG-GUI LIU, Institute of Physics, Chinese Academy of Sciences, Beijing 100190, China — We developed a non-equilibrium Monte Carlo method to investigate dynamical spins and magnetizations of nanomagnets with strong magnetic anisotropy and applied it to Co spin chains on Pt surface and a composite spin system (Phys. Rev. B 73, 174418; Phys. Rev. Lett. 96, 217201; Front. Phys. China 2, 424). Here we report on our exploration for universal dynamical magnetic properties of spin chains and single-layered nanomagnets with strong magnetic anisotropy. Furthermore, we investigate representative systems composed of sub-10nm nanomagnets with large uniaxial anisotropy for magnetic data storage, finding various magnetization memory effects and aging effect in such single systems of the interacting nanomagnets with the same easy axis, and study the exchange bias and training effect observed in composite films and heterostructures. This method is proved to be effective and reliable in simulating dynamical magnetism in nanomagnets with strong magnetic anisotropy.

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