Three-Dimensional Micromagnetic Simulation of Spatial Distribution of Magnetization in Thick Cobalt Layers

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Spatial magnetization distribution of cobalt layer is studied by means of three-dimensional micromagnetic simulations in the range of cobalt thickness d from 10 to 200 nm. In this range a spin-reorientation phase transition occurs, while the cobalt thickness increases, from a state with in-plane-oriented magnetization, to a state with out-of-plane-oriented components of magnetization [1, 2]. An infinite cobalt layer is modeled by the 750nmx750nmx$d$ structure consisting of simulation cells of sizes of 3nmx3nmx3nm and the periodic boundary conditions. For larger thicknesses, a labirynth, partially closed, stripe structure has been found.

References:

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