

Magnetic resonance force microscopy of planar ferromagnetic nanostructures

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We report the investigation of microwave resonant properties of ferromagnetic nanostructures using magnetic resonance force microscope (MRFM). The home-made MRFM based on “Solver-HV” scanning probe microscope [1-3] was applied for the measurements of ferromagnetic resonance (FMR) in multilayer thin-film structures Co/Pt and spin-wave resonances in the individual microstripes NiFe. All results are supported by micromagnetic modeling of the MRFM response, as well as the calculations of MRFM spectra and spatial distributions of the resonant oscillations of the magnetization.

The peculiarities of magnetic interaction between probe and sample in MRFM experiments are analyzed. Some perspectives of MRFM application for the investigation of spatially modified magnetic nanostructures are discussed.

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