

Abstract Submitted
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Studies of isolated and interacting ferromagnetic gapped nanorings¹ JIE LI, SHENG ZHANG, JASON BARTELL, CHRIS GRIGAS, Penn State University, CRISTIANO NISOLI, Los Alamos National Lab, PAUL LAMMERT, VINCENT CRESPI, PETER SCHIFFER, Penn State University — We have used micromagnetic simulation and magnetic force microscopy (MFM) to study isolated and interacting permalloy nanorings that are lithographically fabricated with gaps that prevent a rotationally symmetric magnetic state. The gapped nanorings have inner and outer radii of 200 and 300 nm respectively, and the gap has a subtended width of ~ 20 degrees. The nanorings generate a strong magnetic field only in the gap, and thus the magnetization states of gapped nanorings are much more accessible to MFM imaging than complete rings. We have investigated the properties of these gapped nanorings, including the anisotropy in their coercive field and the relative alignment of the magnetic polarization in coupled pairs.

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