

# Magnetic normal modes in ferromagnetic and antiferromagnetic state bi-component periodic systems

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Experimental Brillouin light scattering analysis and numerical study based on the dynamical matrix method of the thermal magnetic normal modes in periodic arrays of Py/Co elliptical dots have been performed. Dots have thickness of 25 nm, length of 1  $\mu\text{m}$  and width of 225 nm. The study was done at the center of the Brillouin zone by varying  $H$  from 1500 Oe to -1500 Oe passing from the ferromagnetic state to the antiferromagnetic state. In both the ferromagnetic and antiferromagnetic states we have found six relevant collective modes belonging to Py and Co materials.