

Abstract Submitted  
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**Multiple Quantum Transitions In Magnetic Nanoparticles** NATALIA NOGINOVA, NSU, Norfolk, VA, ADRIAN RADOCEA, Cornell University, Ithaca, NY, VADIM A. ATSARKIN, IRE, Moscow, Russia — Absorption at multiple resonance frequencies is observed in magnetic nanoparticles in strong similarity with forbidden multiple quantum transitions known for paramagnetic ions. The detailed studies of these low-field signals in the dependence on temperature, concentration and orientation of the texturized samples will be presented and discussed using a “quantization” approach, considering resonance transitions between energy levels of a giant spin corresponding to the total magnetic moment of a nanoparticle.

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