

Abstract Submitted
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2d order ferromagnetic resonance in nanoparticles and the dating of archaeological ceramics DEREK WALTON, McMaster Un. — Ferromagnetic resonance is almost exclusively explored experimentally in 1st order where one photon decays into a single magnon, necessarily of the uniform or magnetostatic modes. In 2d order where the photon creates two magnons of equal and opposite wavevector, it is well-known that details of the magnon spectrum become significant. An important consideration is the cut-off in the dispersion relations for magnons whose wavelength exceeds twice the scale of the particle. I will discuss the use of this property to selectively magnetize or demagnetize assemblies of single domain grains. This permits rather sensitive dating of ancient ceramics, and accurate determination of grain size distributions

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