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Spin Waves in the FCC Kagome Lattice[1] MARTIN LEBLANC, Memorial University of Newfoundland, BYRON SOUTHERN, University of Manitoba, MARTIN PLUMER, JOHN WHITEHEAD, Memorial University of Newfoundland — The impact of an effective local cubic anisotropy [1] on the spin wave excitations and inelastic neutron scattering intensity peaks of the Heisenberg model on the 3D fcc kagome lattice are examined through a linear spin wave theory. Previous Monte Carlo simulations revealed that the addition of anisotropy to the fcc kagome lattice changes the order of the phase transition from weakly first order to continuous and restricts the $T = 0$ spin configuration to a number of discrete ground states, removing the continuous degeneracy [2]. It is shown that the addition of anisotropy removes the number of zero energy modes in the excitation spectrum associated with the removed degeneracies. These results are relevant to Ir-Mn alloys which have been widely used by the magnetic storage industry in thin-film form as the antiferromagnetic pinning layer in GMR and TMR spin valves [2].
[1] L. Szunyogh, B. Lazarovits, L. Udvardi, J. Jackson, and U. Nowak, Phys. Rev. B **79**, 020403(R) (2009).
[2] M.D. LeBlanc, M.L. Plumer, J.P. Whitehead, and B.W. Southern, Phys. Rev. B **88**, 094406 (2013).

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Martin LeBlanc
Memorial University of Newfoundland

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