

Abstract Submitted
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Spin wave theory study of neutron intensity, magnetic field, and anisotropy of Type IIA FCC antiferromagnet¹ TRINANJAN DATTA, Augusta State University, DAO-XIN YAO, State Key Lab of Optoelectronic Materials and Technologies, School of Physics and Engineering, Sun Yat-sen University — We study the spin dynamics in a 3D quantum antiferromagnet on a face-centered cubic (FCC) lattice. The effects of magnetic field, single-ion anisotropy, and biquadratic interactions are investigated using linear spin wave theory with Dyson-Maleev transformation for spins in a canted basis. We calculate the expected finite frequency neutron scattering intensity and give qualitative criteria for typical FCC materials MnO and CoO. The magnetization reduction due to quantum zero point fluctuations is also analyzed.

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