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Two magnon Raman scattering in a $J_1 - J_2$ antiferromagnet and its implications for iron arsenides[1] ELIHU ABRAHAMS, Rutgers University, PALLAB GOSWAMI, QIMIAO SI, Rice University — The observation spin-wave excitations at the zone boundary and up to energies 200 meV in inelastic neutron scattering measurements in iron arsenides have highlighted the relevance of quasi-local moments and $J_1 - J_2$ magnetic frustration in these materials. Motivated by these experimental observations, we have studied two magnon Raman scattering intensity of a $J_1 - J_2$ Heisenberg antiferromagnet for different experimental geometries. We demonstrate that careful measurements of Raman intensity in different geometry can be useful in understanding the role of local moments, and magnetic frustration in iron arsenides.

[1]NSF/DMR

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