

Abstract Submitted
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Pressure-dependent Raman scattering study of CoV_2O_4 ¹ TAYLOR BYRUM, SAMUEL GLEASON, Univ of Illinois - Urbana, HAIDONG ZHOU, Univ of Tennessee - Knoxville, S. LANCE COOPER, Univ of Illinois - Urbana — The AV_2O_4 ($A = \text{Cd}, \text{Mn}, \text{Mg}, \text{Zn}, \text{Co}$) spinel family provides a fertile ground to explore the crossover between electron localization and itinerancy, which can be tuned with chemical (A -site substitution) and/or physical pressure. CoV_2O_4 resides closest to the predicted itinerant electron limit for the vanadium spinel family. Recent experiments have shown the existence of a critical V-V separation by inducing a metallic transition in CoV_2O_4 with a pressure of ~ 6 GPa.² While the structure of CoV_2O_4 has been theoretically suggested to remain cubic through the metallic transition,³ no structural measurements under pressure have been performed. Raman spectroscopy is well suited to address this issue, as it is sensitive to even subtle structural changes. In this presentation, I present a pressure-dependent Raman scattering study of CoV_2O_4 to elucidate the role the structure plays in the metallic transition.

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²A. Kismarhardja, *et al.*, Phys. Rev. Lett. **106**, 056602 (2011).

³R. Kaur, *et al.*, J. Phys.: Condens. Matter **26**, 045505 (2014).

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