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Magnetic Structure and Magnetic Properties of CaMn2Sb2 A.L. LIMA SHARMA, Yeshiva University, A.M.S. GOMES, Universidade Federal do Rio de Janeiro, J.L. GONZALES, Pontificia Universidade Catolica do Rio de Janeiro - PUC, W. RATCLIFF II, National Institute of Standards and Technology - NIST — The AM2X2 ternary intermetallic (A = rare or alkaline earth, M = transition metal) compounds have revealed interesting magnetic properties due to the interplay between their magnetic sublattices. Pursuing the idea that the coupling between Mn-Mn ions can significantly affect electric transport properties, we investigated (Ca,Sr)Mn2Sb2 intermetallic compounds which presents two secondary magnetic transitions at 82K and 250K. Field dependent dc-magnetization curves for CaMn2Sb2 were obtained at two different temperatures, above and below 250K, show a relatively steep increase of the magnetization upon increasing the field to H_- 5 kOe, followed by a less steep and almost linear increase with the field and no tendency for saturation. The net macroscopic moment on the Mn at 300 K and 50 kOe is only a fraction of a Bohr magneton (ca. 0.15 iB/ Mn), and evidently, a simple interpretation of its value in terms of localized high/low spin Mn2+ ions is unrealistic. The low moment can be viewed as a signature of the counterbalanced coupling between Mn atoms that are sitting on two inequivalent magnetic sites as predicted by theory [1]. In order to understand CaMn2Sb2 magnetic structure, we also performed neutron scattering measurements to clarify the magnetic structure and the origin of the low temperature transition. [1] S. Boved, J. Merz, A. L. Lima, V. Fritsch, J. D. Thompson, J. L. Sarrao, M. Gillessen, and R. Dronskowski. *Inorg. Chem.*, 45:4047, 2006.

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