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Structurally-driven Mott Transition in Single-Crystal $Ca_2Ru_{1-x}Cr_xO_4$[1] T.F. QI, S. CHIKARA, O.B. KORNETA, S. PARKIN, G. CAO, CENTER FOR ADVANCED MATERIALS, DEPARTMENT OF PHYSICS AND ASTRONOMY, UNIVERSITY OF KENTUCKY TEAM — We report results of a structural, magnetic and transport study of single crystal $Ca_2Ru_{1-x}Cr_xO_4$. Slight substitution of Cr for Ru drastically suppresses the structural distortion and reduces the Mott transition, but causes no parallel changes in the magnetic properties. These phenomena suggest an unusual relationship between Mott transition and magnetic ordering. The results will be presented and discussed along with comparison drawn with other related systems.

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