

Abstract Submitted  
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**Dimensionality and doping effect on the Core-level X-ray photoemission satellites in layered ruthenates.**<sup>1</sup> HAIZHONG GUO, YI LI, BIAO HU, RONGYING JIN, E.W. PLUMMER, JIANDI ZHANG, Department of Physics and Astronomy, Louisiana State University, Baton Rouge, LA 70803, USA, D. URBINA, Department of Physics, FIU, Miami, FL 33199, USA, TIJIANG LIU, DAVID FOBES, ZHIQIANG MAO, Physics Department, Tulane University, New Orleans, LA 70118, USA — Core-level photoelectron spectra of the layered perovskite crystal  $\text{Sr}_{n+1}\text{Ru}_n\text{O}_{3n+1}$  ( $n = 1, 2, \text{ and } 3$ ) and Mn-doped  $\text{Sr}_3\text{Ru}_2\text{O}_7$  are investigated by x-ray photoemission spectroscopy (XPS) techniques. The Sr  $3d$  and Ru  $3d$  core-level spectra exhibit a two-peak structure, screened and unscreened peaks, indicating strong correlation effects among Ru  $4d$  electrons. However, there are little changes of the core-level satellite features with  $n$ , suggesting the electron-electron correlation is mainly confined in the  $\text{RuO}_2$  plane. On the other hand, doping of Mn will drastically affect the core-level spectral weight, reflecting the doping-induced metal-to-insulator transition in the doped system. The position of Ru-core levels remain the same, thus, indicating no doping-induced change of Ru valence.

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