Metal-Insulator transition and spin-orbit physics in Ru oxides

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Orbital degree of freedom is one of the least understood degrees of freedom compared with other threes: spin, charge, and lattice. Nonetheless, it has demonstrated itself that it is at the very heart of several intriguing problems of condensed matter physics, and hence has attracted significant attentions over the past decades or so.
In this talk, I am going to highlight how the orbital degree of freedom plays an important role in the metal-insulator transition of several Ru compounds covering several aspects of its physics: Li2RuO3 [1, 2] and SrRuO3 thin film [3].

[1] J. Park, et al., Scientific Reports 6, 25238 (2016).
[2] S. Yun, et al., to be submitted.
[3] S. Kang, et al., Phys. Rev. Lett. (submitted).