

# ***Topological Crystalline Metal in Perovskite Iridates***

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Novel interplay of spin-orbit coupling and electron correlations in quantum materials recently has emerged as a new paradigm for correlated electron physics. In particular, Iridium oxides (Iridates) with strong spin-orbit coupling have provided an excellent playground to explore exotic phases such as Kitaev spin liquid, unconventional magnetic orderings, and topological phases. In this lecture, I will first review recent studies of layered perovskite Iridates including symmetry protected nodal line Fermi surface line in  $\text{SrIrO}_3$ . Then I will present how a new topological metal dubbed topological crystalline metal appears in perovskite iridates [1], and discuss its experimental implications.

[1] Yige Chen, Yuan-Ming Lu, and Hae-Young Kee, *Nature Communications* 6, 6593 (2015).