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Topological crystalline semimetal in Iridates with strong spin-orbit coupling¹

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Numerous efforts have been devoted to reveal exotic semimetallic phases with topologically non-trivial bulk and/or surface states in materials with strong spin-orbit coupling. In particular, semimetals with nodal line Fermi surface (FS) exhibit novel properties, and searching for candidate materials becomes an interesting research direction. I will first present a generic condition for a four-fold degenerate nodal line FS in non-symmorphic crystals with inversion and time-reversal symmetry. Such a nodal ring FS and topological surface states emerge in SrIrO_3 with strong spin-orbit coupling. Possible experimental signatures will be also discussed.

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