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## **【143】 Classification and higher-order topology of triple nodal points**

*Thursday, 2 September 2021 15:15 (15 minutes)*

We investigate triple nodal points, i.e., three-fold degeneracies of energy bands in the momentum space of three-dimensional crystalline solids. First, based on the symmetries required for their stability, we develop a classification of triple nodal points in weakly spin-orbit-coupled materials. Second, by combining the derived classification with symmetry indicators for corner charges, we find that pairs of triple points in semimetals are associated with monopole charges and higher-order topology. The higher-order bulk-boundary correspondence of such triple-point pairs is a quantized fractional jump in the momentum dependence of the electric charge localized at the crystal hinges. I will illustrate these results using first-principles calculations for the compound  $\text{Sc}_3\text{AlC}$  in applied strain.

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