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## **[606] Type-I and type-II classification of composite Weyl nodes**

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Linear Weyl nodes are classified in type-I and type-II. The Fermi surface, described by a  $2^{nd}$  order algebraic surface, has a well define morphology for each type of Weyl point. When the  $C_4$  and  $C_6$  rotation symmetries forbid linear energy dispersion, as it happens in the composite Weyl nodes, terms with a quadratic or cubic dispersion must be included into the Hamiltonian. Consequently, their Fermi surfaces are given by  $4^{th}$  or  $6^{th}$  order algebraic surfaces, respectively. We can still classify the composite Weyl nodes in two different types (I and II). However, each type of crossing can exhibit Fermi surfaces with new morphologies. We present the different morphologies that we have found, and illustrate some of them in real materials.

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