# Crystallographic defects in approximants of quasicrystals

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Quasicrystals are often surrounded by so-called approximant crystals, which exhibit a very similar local order than the quasicrystal itself, yet showing also periodicity. Approximants represent a class of highly complex intermetallic compounds, whose crystal structure is based on giant unit-cells containing up to hundreds or even thousands of atoms. Such a kind of structurally complex alloy phases exists in several systems consisting of two, three or more components. Local order in such phases is different than in simple crystals. The unit cells have a substructure based on polyhedral atom arrangements or clusters that partially overlap or are linked by bridging elements. Due to their large unit cell, approximants offer an interest from point of view of crystallographic defects. During this talk, we will present in details some complex structures, as for example, approximants chosen in the Al-Cr-Fe system. Some results on defects studies by transmission electron microscopy of selected complex intermetallics will also be discussed.