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### **Superconductivity and Magnetism in Pnictides**

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Magnetic atoms are not likely to be the main structure elements in superconducting materials, since they tend to destroy superconducting Cooper pairs. However, in recent times several magnetically-active composites appeared that also exhibit superconducting properties. I will discuss the most recent class of Fe-based metallic materials with superconducting  $T_c$  up to 55 K that is currently being intensively investigated. Questions of the pairing glue, symmetry and structure of the condensed state in the Fe-based superconductors is still open despite experimental and theoretical efforts. Contributors to this uncertainty are: (a) the multi-band nature of electronic structure; (b) complex phase diagram where superconductivity appears close and sometimes together with magnetism; (c) several different families of compounds with different physical properties. In this talk I will focus on the exciting proximity of two electronic orders: superconducting (SC) and magnetic spin-density-wave (SDW) states. I will show how the interplay between these two states depends on the Fermi surface shape, the order parameter structure, the strength of SC and SDW interactions, and what can be concluded about the superconductivity on the basis of this interplay.