

Tuning of charge density waves in correlated metals – New results and insights

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External control of electronic phases in correlated-electron materials is a long-standing challenge of condensed-matter research. In the recent years it has been realized that the underlying crystal lattice was more than a mere spectator and could be used as an insightful tuning knob. In the first part of this talk, I will show how the combination of pressure (hydrostatic or uniaxial) tuning and inelastic x-ray spectroscopy has been used in the course of the last decade to gain fresh insights on the properties of CDW in high temperature superconducting cuprates [1-3].

The second part of the talk, I will focus on BaNi_2As_2 , a non-magnetic analogue of the parent compound of Fe-based superconductors. In this material incommensurate and commensurate CDW have been recently reported and yield a new form of electronic nematicity which strongly couples to the crystal lattice.

[1] S. M. Souliou, et al. *Phys. Rev. B* **97** 020503 (2018)

[2] H. H. Kim, S. M. Souliou et al. *Science* **362** 1040 (2018)

[3] H. H. Kim, et al. *Phys. Rev. Lett.* **126** 037002 (2021)