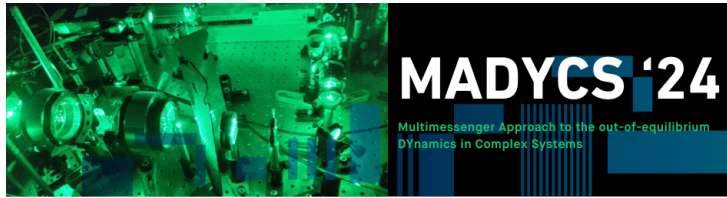


Multimessenger Approach to out-of-equilibrium DYNAMICS in Complex Systems (MADYCS)



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Probing condensates' coherence by time-resolved ARPES: From superconductors to excitonic insulators

Friday, April 19, 2024 11:45 AM (30 minutes)

With its direct correspondence to the electronic structure, angle-resolved photoemission spectroscopy (ARPES) is a ubiquitous tool for the study of quantum materials. When extended to the temporal domain, time-resolved ARPES offers the potential to move beyond equilibrium properties, exploring both the unoccupied electronic structure as well as its dynamical response under ultrafast perturbation [1]. In this talk, I will discuss how time-resolved ARPES can probe the coherence of many-body condensates, from high-temperature superconductivity [2,3], to spin-correlation-driven pseudogap [4], and excitonic insulating behavior [5].

[1] F. Boschini, M. Zonno, A. Damascelli, RMP in press, arXiv:2309.03935 (2023).

[2] F. Boschini et al., Nature Materials 17, 416 (2018).

[3] M. Zonno, F. Boschini, A. Damascelli, JESRP 251, 147091 (2021).

[4] F. Boschini et al., npj Quantum Materials 5, 6 (2020).

[5] D. Golez et al., Phys. Rev. B 106, L121106 (2022).

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