



Quantum Colloquium

Illuminating Electron Correlations

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Host: Maksym Serbyn

Developments in optical technology bring new modalities of probing electron systems. This talk will review several examples of the correlated states revealed by novel optical probes with an emphasis on the theoretical models necessary for interpreting experimental results. We will start by discussing recent experiments in the pseudogap phase of the high T_c cuprates that have been interpreted as the light induced Meissner effect. We will approach this phenomenon from the perspective of nonlinear dynamics of the sine-Gordon model triggered by the strong terahertz pump pulse. This interpretation suggests that these experiments reveal strong superconducting correlations in the pseudogap state but do not require photoinduced superconductivity. We will also discuss sensitive light reflection experiments in layered materials used as probes of electronic states. Examples include the observation of the mixed state between an electronic Wigner crystal with an electron liquid as well as the demonstration of a new type of magnetism in moire systems.

Tuesday, November 5, 2024 11:00am - 12:00pm

Office Bldg West / Ground floor / Heinzl Seminar Room (I21.EG.101)



This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station.

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<https://ista.ac.at/en/campus/how-to-get-here/> The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.