Joint Annual Meeting of the Swiss and Austrian Physical Society 2023



Contribution ID: 60

Type: Talk

[111] Uniaxial Control of Quantum Matter. Application to Cuprates

Tuesday 5 September 2023 17:00 (15 minutes)

Quantum matter is characterised by competing and intertwined orders. Here we will present our recent advances in using uniaxial pressure as a clean "surgical" tool to tune quantum phases while simultaneously obtaining microscopic insights via scattering experiments.

To achieve the fine-tuning, we have designed a new in-situ uniaxial device for large-scale facility research based on an actuator-motor mechanism, efficient feedback loops and the sample-holder design enabling rapid exchange of the samples [1]. I will demonstrate the advanced capabilities of this device by reporting the control of charge and structural degrees of freedom in an archetypical cuprate [2].

[1] RSI 94, 013906 (2023)\\ [2] arXiv:2302.07015(2023)

Theoretical Work

Author: SIMUTIS, Gediminas

Presenter: SIMUTIS, Gediminas

Session Classification: Condensed Matter Physics (KOND)

Track Classification: Condensed Matter Physics (KOND)