



Contribution ID: 57

Type: Talk

【517】 Charge order fluctuations in a stripe-ordered cuprate superconductor

Wednesday 11 September 2024 19:00 (15 minutes)

This study reports direct observation of charge order fluctuations in the unconventional superconductor $\text{La}_{1.675}\text{Eu}_{0.2}\text{Sr}_{0.125}\text{CuO}_4$ (LESCO) using resonant inelastic x-ray scattering (RIXS). Charge order is linked to and competes with superconductivity in cuprates, making its fluctuations key to understanding the low-energy physics in these materials. Past studies mainly focused on indirect methods, but this study uniquely separates out these fluctuations directly. We used numerical simulations to isolate charge order fluctuations from other low-energy signals. Our findings enhance the understanding of these fluctuations in superconductivity and introduce a new method for studying quantum materials.

Primary author: HONG, Xunyang

Co-authors: VON ARX, Karin (University of Zurich); Dr CHOI, J. (Diamond Light Source); Prof. SASSA, Y. (Chalmers University of Technology); Prof. PYON, S. (University of Tokyo); Prof. TAKAYAMA, T. (University of Tokyo); Prof. TAKAGI, H. (University of Tokyo); Dr GARCIA-FERNANDEZ, M. (Diamond Light Source); Dr ZHOU, Ke-Jin (Diamond Light Source); CHANG, Johan; Prof. WANG, Qisi (The Chinese University of Hong Kong)

Presenter: HONG, Xunyang

Session Classification: Electron and photon spectroscopies of quantum materials

Track Classification: Electron and photon spectroscopies of quantum materials