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## Disentangling charge and spin excitations in RIXS spectra and their evolution in the phase diagram of Bi2Sr2CaCu2O8+x superconducting cuprate

Tuesday, 29 October 2019 14:00 (30 minutes)

The knowledge of the elementary excitations is vital for understanding the physics of superconducting cuprates. Nowadays, Resonant Inelastic X-ray Scattering (RIXS) plays an increasingly important role in studying various excitations especially the spin excitations in cuprates. However, the interpretation of the measured excitations is still controversial. One obstacle is that the measured low-energy excitations in doped cuprates are usually of mixed charge and spin character, making the correct assignment of the spectral profile to individual excitations difficult. Using the recent proposed azimuthal dependent RIXS measurement, we resolved the accurate spectral profiles of the charge and spin excitations in Bi2Sr2CaCu2O8+x, and studied their doping and temperature responses separately in the phase diagram. These results help to elucidate the nature of the spin and charge excitations in doped cuprates and their possible correlations to the superconductivity.

## Position

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