

High-Temperature Charge-Stripe Correlations in $\text{La}_{1.675}\text{Eu}_{0.2}\text{Sr}_{0.125}\text{CuO}_4$

Qisi Wang (UZH)

While charge ordering has been established as a universal phenomenon in hole-doped cuprates, its microscopic origin remains elusive. In La-based cuprate compounds, charge order has been interpreted via a stripe picture and suggested to be closely linked to the low-temperature tetragonal (LTT) structural phase. An open question is whether the LTT structure is a consequence or trigger of stripe order. To address this question, we have performed resonant inelastic x-ray scattering (RIXS) study on the stripe-ordered La-based cuprates. Focusing on $\text{La}_{1.675}\text{Eu}_{0.2}\text{Sr}_{0.125}\text{CuO}_4$, it is shown that charge correlations persist beyond the LTT phase. This demonstrates that charge order is a spontaneous symmetry breaking phase in this compound. A direct comparison across all the stripe-ordered compounds further reveals a roughly constant integrated charge scattering intensity. These results suggest a universal stripe order in La-based cuprates.