Approaching meV resolution RIXS instrumentation in the hard x-ray regime

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Resonant inelastic x-ray scattering (RIXS) measurements, particularly at the transition metal K edges, have been limited to excitations around a few hundred meV and above. Either the quasi-elastic signal that remains as background or the low energy-resolution of available RIXS instruments makes it difficult to investigate low-energy excitations like magnons and phonons.

Moreover, observation of fascinating phases like pseudogap and superconducting gap are out of reach for RIXS due partially to low resolving power attainable today. In this presentation, I will talk about the recent developments at the copper K-edge RIXS instrumentation and report preliminary measurements.

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