

Magnetic and Orbital RIXS - an overview

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Resonant Inelastic X-ray Scattering (RIXS) provides direct access to elementary charge, spin and orbital excitations in complex oxides. As a technique it has made tremendous progress with the advent high-brilliance synchrotron X-ray sources. From the theoretical perspective the fundamental question is to precisely which low-energy correlation functions RIXS is sensitive, and to what extent. Depending on the experimental RIXS setup, the measured charge dynamics can include charge-transfer, phonon, d-d and orbital excitations. This talk presents an overview of the recent developments of RIXS as a probe of spin and orbital dynamics and the combined magnetic and orbital modes as they emerge in for instance strongly spin-orbit coupled iridium-oxides.

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