Minicolloque n° MMPS21 **X Oral** **□ Poster**

Understanding strain-induced changes of magnetic interactions and charge gap in square-lattice iridates

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Iridates constitute one of particularly exciting families of Mott insulators due to the competition of different fundamental interactions observed in them: electron-electron correlations, spin-orbit coupling (SOC), and spin-lattice coupling.

I will present our recent theoretical advances in understanding charge and magnetic excitations in iridates, comparing theory to recent Photoemission Spectroscopy (ARPES), Resonant Inelastic X-ray scattering (RIXS), and two-magnon Raman scattering data.

I will also discuss how the structural and physical properties of iridates can be manipulated by applying external pressure and strain. In iridates, SOC mediates unusual almost rigid locking of the magnetic momenta to the lattice through the orbital momenta, providing a new route to control structural and physical properties.

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