

Speaker: Sara MURCIANO (University Paris-Saclay, France)

Title **Experimental prospects on measurement-altered criticality**

Quantum critical systems constitute appealing platforms for the exploration of novel measurement-induced phenomena due to their innate sensitivity to perturbations. I will devise a practical scheme for realizing measurement-altered criticality in a chain of Rydberg atoms tuned to Ising and tricritical Ising phase transitions. Projectively measuring a periodic subset of atoms alters quantum critical correlations in distinct ways that one can control via the choice of measured sites and the measurement outcomes. While this protocol relies on post-selection, the measurement outcomes yielding the most dramatic consequences occur with surprisingly large probabilities.