

# IFIC Seminar by

## Dr. Manuel Gessner

( IFIC, CSIC-UV )

### Quantum metrology - from fundamentals to applications



Quantum metrology identifies strategies to overcome classical precision limits of measurements by identifying highly sensitive quantum states and observables. In this talk we will provide a brief introduction to this field and present some of its recent developments. We will discuss quantum-enhanced measurement strategies ranging from squeezing in an interferometer to nonclassical states in atomic spin systems. We will also explore the deep connection between quantum correlations (entanglement) and metrological sensitivity. As applications we will show how this theory can improve the precision of atomic clocks and the optical resolution of imaging systems.

**Tuesday, 04/10/2022**  
**12pm, Theory Seminar Room**  
**Campus Burjassot; Coffee 11.30 am**

