# ICFO Colloquium Series: Lighting a path for clock and fundamental physics

JUN YE

July 04, 2025
12:00 to 13:00
ICFO Auditorium

**ABSTRACT:**
Laser and quantum science have fueled revolutionary developments in atomic and fundamental physics. Scaling up quantum systems to increasingly large sizes promises to revolutionize the performance of atomic clocks and bring opportunities for new discovery. Quantum technology has brought tens of thousands of atoms to minute-long coherence, enabling the achievement of best measurement precision and accuracy. The combination of ultrafast optics and precision metrology has provided new tools for nuclear physics, leading to the recent breakthrough of quantum-state-resolved laser spectroscopy of thorium-229 nuclear transition. The permeation of quantum metrology to all corners of physics sparks new ideas for testing fundamental laws of nature and searching for new physics.?

**BIO**

Jun Ye is a Fellow of JILA, a Fellow of NIST, and a member of the National Academy of Sciences. His research focuses on the development of new tools for light-matter interactions and their applications in precision measurement, quantum science, and frequency metrology. He has co-authored over 400 scientific papers and delivered 700 invited talks. Among his awards and honors are five Gold Medals from the US Commerce Department, N.F. Ramsey Prize (APS), I.I. Rabi Award (IEEE), I.I. Rabi Prize (APS), and W.F. Meggers Award (OSA). His recent honors include Breakthrough Prize in Fundamental Physics, Niels Boh Institute Medal of Honour, Herbert Walther Award, and Vannevar Bush Fellowship. The we page for the research group, including highlights for many highly talented and enthusiasti young researchers, ishttp://jila.colorado.edu/YeLabs/.?

**Hosted by:** Prof. Dr. Jens Biegert