ICFO

SEMINAR: Metasurface-Based Cavities for Quantum Optics with Atomic Ensembles

ANYA HOUK

April 07, 2026
12:00 to 13:00
Seminar Room

Metasurfaces have produced exciting new advancements in optics. These two-dimensional planar structures allow for precise control of the electromagnetic wavefront via induced sharp phase variations in transmitted and reflected waves, and aim to replace bulk-optical components for ultra-thin, flat, highly miniaturized, and high-performance optical devices. I will highlight a selection of experimental successes and challenges in the design and fabrication of meso-scale cavities with metasurfaces and photonic crystals for experiments with atomic ensembles. In particular, fiber-integrated permeable photonic crystal mirrors, slow-wave structures with dimerized high-contrast gratings (DHCG), and focusing polarization dichroic meta-mirrors made by the Nanophotonics and Quantum Optics (NPQO) group from the University of Waterloo.

Hosted by: Prof. Dr. Hugues de Riedmatten