

The nuts and bolts of building a continuous optical clock and continuous matterwave devices

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Date 2022.12.22 (Thur)

Place S4-208 數學與理論物理中心交誼廳

Time 14:00-16:00

Abstract:

Coherent manipulation of high-quality factor optical transitions (mHz~kHz narrow-line) provides for exquisite control over the atom-light interaction. In this talk, I will first discuss the recent realization of a first continuous wave Bose Einstein condensate, matter wave analogue of a CW optical laser with fully reflective cavity mirrors. This proof-of-principle demonstration provides a new, hitherto missing piece of atom optics, enabling the construction of continuous coherent-matter-wave devices. In the second half of the talk, I will focus on the development of novel clock-line cooling techniques for enhanced control of lattice-trapped atoms towards next-generation optical lattice clocks or continuous operation of optical clocks.