Hamburg Photon Science Colloquium

TOWARDS INTEGRATED OPTICAL CLOCKS & FREQUENCY COMB SPECTROSCOPY SYSTEMS

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Like a tuning fork for light, optical resonators have a characteristic set of frequencies at which it is possible to confine light waves. At these frequencies, optical energy can be efficiently stored for lengths of time characterized by the resonator Q factor, roughly the storage time in cycles of oscillation. In the past there has been remarkable progress in boosting optical storage time in micro and millimeter-scale optical resonators with Q factors exceeding 100 billion. This opens up new opportunities to access a wide range of nonlinear phenomena and to create laser devices operating at low power. After reviewing the nonlinear physics of these devices, current efforts to miniaturize time standards and stable frequency sources for metrology and spectroscopy will be described.

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2:00 PM

CFEL
SEMINAR ROOMS I-III