Harvard Quantum Initiative

HQI Special Seminar

Wednesday | November 1| 4:30pm
Harvard University, Jefferson 250

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Technion

Attosecond Quantum Optics

The role of the quantum features of light in attosecond processes has remained unexplored. In a series of recent works, we developed the quantum-optical theory of attosecond processes and applied it to high harmonic generation (HHG). In this talk, I will show how the correlations between the emitters induce correlations between the emitted harmonics. Furthermore, I will show that the spectrum of HHG is sensitive to the photon statistics of the driving light. Thermal and squeezed light substantially increase the efficiency of HHG compared to a coherent light of the same intensity. The prospects of the attosecond quantum optics include the engineering of quantum many-photon states of light and creation of entangled attosecond pulses.