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Distinguishing between squeezed light and coherent state mixture drivers in above threshold ionization

TECHNION

Israel Institute

of Technology

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<u>Abstract</u>

Recent theoretical and experimental studies showed that high harmonic generation (HHG) and above threshold ionization (ATI) can be driven by non-classical light, e.g. bright squeezed vacuum. However, all the theoretical studies analyzed these processes by incoherent summation of semiclassical contributions. This raises a pivotal question in the emerging field of strong-light quantum optics: are there quantum signatures in these experiments that cannot be obtained by driven these processes with a mixture of coherent states? I will address this question in my talk and present a proposed ATI experiment that distinguishes between squeezed driver and coherent state mixture driver.

> ההרצאה תתקיים ביום רביעי ,ה-8.5.24 בשעה 12:30 באודיטוריום המכון למצב מוצק, קומת כניסה The lecture will take place on Wednesday, 8.5.24 at 12:30 at the Solid State Institute auditorium, entrance floor

> > M.Sc. Student of Professor Oren Cohen