



Solid State Institute
המכון למצב מוצק

TECHNION
Israel Institute
of Technology



הטכניון
מכון טכנולוגי
לישראל

SPECIAL SEMINAR

סמינר מיוחד

Quantum tomography of nonperturbative harmonic light from solids

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Technion

Abstract

Since it was first reported a decade ago, the process of high harmonic generation (HHG) from solid media opened up new opportunities to probe condensed matter systems and their ultrafast dynamics. While most of the research that have been done used either the emitted harmonic light as a tool to study the material properties and its dynamics or the material as a way to manipulate the parameters of the emitted light, the quantum nature of the emitted light has remained elusive and assumed to be fully classical.

In my talk, I will present the first quantum state measurement of harmonic light in the nonperturbative regime. Using a homebuilt homodyne detection system and a phase-locked local oscillator, we measure the Wigner function of the third harmonic out of highly oriented pyrolytic graphite (HOPG). I will present the first experimental results and discuss about their non classically, the conditions of the measurement and the future work that will be done.

ההרצאה תתקיים ביום שני, ה-17.6.24 בשעה 12:30
באודיטוריום המכון למצב מוצק, קומת כניסה

**The lecture will take place on Monday, 17.6.24 at 12:30
at the Solid State Institute auditorium, entrance floor**

M.Sc. Student of Assistant Professor Michael Krueger and Associate Professor Ido Kaminer