

סמינר - SEMINAR

הנדך מוזמנת להרצאה סמינריונית של הפקולטה להנדסת מכונות, שתתקיים ביום ד' 20.12.2017 (ב' בטבת, תשע"ח), בבניין דן קאהן, אודיטוריום 1, 13:30.

מרצה:

Dr. Inbar Grinberg

Postdoctoral Fellow

University of Illinois at Urbana-Champaign, U.S.A.

על הנושא:

MAGNETO-MECHANICAL TOPOLOGICAL LEGO

The seminar will be given in English

להלן תקציר ההרצאה:

Topological insulators are an exciting class of materials, with protected conductive states on surfaces or edges in an otherwise insulating bulk. These materials are characterized by a band structure consisting of a bandgap, with the emergence of mid gap states which are protected, meaning, they are robust in face of defects and therefore have scatter-free edge conduction. In recent years there is a rising interest in producing synthetic versions of metamaterials with these topological properties, especially for producing robust waveguides with immunity to backscattering, which could be used to build lossless communication lines for electronics, optics, and acoustics waves. Furthermore, in the acoustic regime these topologically protected states can be used for applications like vibration isolation, acoustic cloaking, and pave a path towards new possibilities in controlling sound propagation.

We present a Lego like tool kit, which can be utilized to produce different acoustic metamaterials with some tailored properties (for example a band gap or a gapless system). Our system consists of discrete coupled magnet-loaded resonators, where the coupling strength is controlled by coupling rates. By changing the arrangement of distances within a resonator array, a variety of different states (e.g. trivial, conducting, and topological) in 1d and 2d can be achieved, using the same Lego like elements.

בברכה,

מארח: פרופ' דוד אילתה

טל 052-2344111

מרכז הסמינרים