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## Photonic topological states: from microwaves to optics

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### Abstract

In this talk I will overview the recent advances of our group at Nanophotonics and Metamaterials department at ITMO University in the field of topological photonics focusing on the following topics:

1. Topological edge states in zigzag arrays. This includes their theoretical description and experimental investigation in microwaves and optics, both on plasmonic and all-dielectric platforms.
2. Time-reversal-invariant photonic topological systems in 1, 2 and 3 dimensions with the topological states enabled by the bianisotropic response of the structure. Both theoretical description and recent experimental results will be summarized.
3. Extraction of the topological invariant of a 2D metasurface from the measured far-field scattering spectra. Such far-field spectroscopy of topological invariants provides an alternative paradigm to the conventional near-field technique based on the edge state microscopy.
4. Interaction-induced topological edge states of bound photon pairs realized in the interacting quantum regime: theoretical model and the proposed platform for experimental realization.

ההרצאה תתקיים ביום רביעי, ה - 7.2.2018 בשעה 12:30  
באודיטוריום המכון למצב מוצק, קומת כניסה

The lecture will take place on Wednesday, 7.2.2018 at 12:30  
at the Solid State Institute auditorium, entrance floor

Host: Distinguished Professor Moti Segev and Assistant Professor Ido Kaminer