

**Ben-Gurion University of the Negev
Blaustein Institutes for Desert Research
The Swiss Institute for Dryland Environmental and Energy Research
Alexandre Yersin Department of Solar Energy and Environmental Physics**

Floquet Hamiltonians and topological insulators

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Abstract:

Floquet topological insulators (FTIs) are an emerging category of materials whose properties are transformed by time-periodic forcing, with a wide range of applications to electronics, laser science, and more. Traditionally, the theory of FTIs is based on discrete, approximated models. Can FTIs be understood from their first-principles continuum models, i.e., from a driven Schrodinger equation? First, we rigorously show that the propagation of physically relevant wave-packets are governed by a Dirac equation. This dynamical-systems approach allows us to study both the bulk and edge insulation of FTIs. Particularly, in contrast to traditional approximate models, we show that in the Dirac model, localized edge-modes decay due to a resonance phenomenon.

Date & Location:

Thursday, December 16, 2021, at 12:30

Join Zoom Meeting

<https://us02web.zoom.us/j/85178877421?pwd=ZzRNakk0NytURW5BZk93cEcwYVpldz09>

Meeting ID: 851 7887 7421

Passcode: 612694

