

Chez Pierre

Presents ...

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MIT Room 4-331



Chez Pierre Seminar

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"Non-equilibrium steady state design of electronic properties"

Non-equilibrium quantum systems stand at a natural frontier of physics that is only beginning to be probed by theory and experiment. Particularly exciting is the possibility of attaining material properties that are unreachable at equilibrium. An understanding of the nature of the steady states in systems that are driven by an AC electric field while in contact with a thermal reservoir is still largely missing.

In this talk, we first present some insight that can be gained from a concrete solvable example, that of periodically driven graphene-like lattices, whose electronic steady state properties in the presence of a bath can be determined. Second, we discuss possible routes to push the extent in which phases of matter can be observed, in particular we focus on photo-induced superconductivity in systems where superconductivity does not occur at equilibrium, for example in simple semiconductors and possibly at room temperature.