

M. A. Martin-Delgado: *Topological Insulators under Quantum Dissipative Dynamics*

In this talk I will present recent results regarding the stability of fermionic topological orders in the presence of dissipation. Particularly, we address the behavior of topological insulators in the presence of thermal baths. These systems present non-vanishing topological conductivity at zero temperature, as their conduction and valence bands are connected by the so-called (topologically protected) edge states. I shall explain that, in general, these edge states are no longer protected when the system is in contact with a thermal bath. However, for some kind of environments, it is possible to obtain and characterize topologically ordered phases even in the presence of thermal dissipation. We will illustrate both results with examples for models with gauge symmetries: the Creutz Ladder in 1D and the Haldane model in 2D.