Physics & Astronomy Colloquium

Presents

Fiona Burnell

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University of Minnesota

Thursday, April 1, 2021
4:10 pm via Zoom

Meet the speaker at 3:30 pm, join us in welcoming the speaker and for an informal chat!

"Exact models of many-body quantum scars"

There are a few well-known ways for quantum mechanical, many-body systems to avoid coming to thermal equilibrium. For example, we know of two classes of systems -- integrable systems, and many-body localized systems -- for which conservation laws prevent any eigenstate from reaching (conventional) thermal equilibrium. More recently, a much more subtle type of non-thermal quantum phenomenon has been discovered, dubbed many-body quantum scars. In these systems, a small number of eigenstates (and hence a small number of initial conditions) have non-thermal behavior, while most initial states will approach thermal equilibrium in the usual way. I will give a general picture of how and when this phenomenon arises, and discuss several examples of systems exhibiting exact quantum many-body scars.

Host: Dr. Michael Forbes

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