

Condensed Matter Theory Seminar

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Numerical Studies of Kitaev Materials at finite Temperature and Field

In this talk I present various theoretical efforts that have gone into understanding the physics of the Kitaev candidate material α -RuCl₃. In such materials, both conventional linear spin-wave theory as well as Kitaev's exact solution break down. Therefore, the more reliable theoretical methods have been exact diagonalization techniques like the finite-temperature Lanczos method. By applying these methods to ab-initio guided spin models, we have found good agreement with many experiments and gained insight into the relevant phases.

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