SFB/TRR 21 - Seminar

23. Januar 2014, Ulm

Catherine Laflamme

(Universität Innsbruck)

Hybrid Topological Quantum Computation with Cold Atoms

In this talk I will begin by discussing the exchange statistics of quantum particles and how these statistics can be exploited for topological quantum computation. One well-known example of a particle with non-trivial exchange statistics are Majorana fermions, which can be realised at the ends of the 1D Kitaev wire. I will review how Majorana fermions emerge in this setup, and discuss possible implementations of the Kitaev wire in cold atom settings. Finally I will introduce a complete hybrid-topological quantum computation setup based on the manipulation of these Majorana Fermions.

23. Januar 2014, 11:00 Uhr

Universität Ulm, Raum N25/4413
Albert-Einstein-Allee 11, 89081 Ulm

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