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# Beyond Majorana fermions - non-abelian anyons in abelian quantum Hall states

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## Abstract

In my talk I will describe how the combination of the abelian fractional quantum Hall effect with super-conductivity may give rise to non-abelian anyons that go beyond Majorana fermions in two dimensions, and how the combination of spin-orbit coupling, super-conductivity, magnetic fields and electron-electron interaction may give rise to similar anyons in one dimension. I will discuss various properties of these anyons, such that the ground state degeneracy, their evolution under interchanges, and their sensitivity to disorder.

The talk will be based on works done in collaboration with Netanel Lindner, Erez Berg, Gil Refael, Yuval Oreg and Eran Sela, from Cal-Tech, Weizmann and Tel-Aviv.

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