

Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Skyrmion spin texture in ferromagnetic semiconductor-superconductor heterostructures KRISTOFER BJÖRNSSON, ANNICA BLACK-SCHAFFER, Uppsala Univ — Topological superconductors are of interest because they are predicted to host Majorana fermions. One example are two-dimensional ferromagnetic semiconductor-superconductor heterostructures, where Majorana fermions are predicted to appear in vortices. The system has previously been classified using a Chern number, but we show that the Chern number is related to a Skyrmion spin texture in the band structure. The Skyrmion spin texture has the advantage of enabling direct experimental measurements of the topological invariant through for example spin-polarized ARPES. The Skyrmion spin texture is also of interest from a conceptual point of view, as it provides a more intuitively accessible topological invariant than the otherwise rather abstract Chern number.

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Date submitted: 11 Nov 2014

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