

Meetings of the Belgian Quantum Physics Initiative

Colloquium



Steven H. Simon

University of Oxford

Topological Matter and Why You Should be Interested

In two dimensional topological phases of matter, processes depend on gross topology rather than detailed geometry. Thinking in 2+1 dimensions, particle world lines can be interpreted as knots or links, and the amplitude for certain processes becomes a topological invariant of that link. While sounding rather exotic, we believe that such phases of matter not only exist, but have actually been observed in quantum Hall experiments, and could provide a uniquely practical route to building a quantum computer. Possibilities have also been proposed for creating similar physics in systems ranging from superfluid helium to strontium ruthenate to semiconductor-superconductor junctions to quantum wires to spin systems to graphene to cold atoms.

Thursday 1st FEBRUARY 2018 AT 2.00 P.M.

COFFEE AND TEA WILL BE SERVED AT 3.00 P.M.

Two short talks will follow:

4pm: Mathias Van Regemortel (Antwerp Univ.)

TBA

4:30pm: Matthias Bal (Ghent Univ.)

TBA

Espace Baudouin

Académie Royale de Belgique

Rue Ducale 1, 1000 Bruxelles - Belgique

contact: ngoldman@ulb.ac.be