

The Nobel Prize in Physics 2016 : Neutrons and Topology

Thursday, 22 June 2017 11:30 (45 minutes)

The Nobel Prize in Physics 2016 was awarded with one half to David J. Thouless, and the other half to F. Duncan M. Haldane and J. Michael Kosterlitz “for theoretical discoveries of topological phase transitions and topological phases of matter”.

In my talk I will explain the theoretical concepts awarded with the Nobel Prize and their experimental realizations with a strong focus on the neutron scattering world: Typical examples include (i) low dimensional quantum magnets where a magnetic field induced long range order transition of a gapped 1D spin chain can be described akin to a Bose Einstein Condensation of magnons. (ii) Vortex states in 2D spin systems (Kosterlitz-Thouless transition). (iii) The particle properties of Skyrmions.

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