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## Is the composite fermion a Dirac particle?

*Wednesday, 15 April 2015 09:40 (40 minutes)*

The theory of the fractional quantum Hall effect is based on the notion of the composite fermion, which is the low-energy quasiparticle for filling factor close to  $1/2$ . I will show that the particle-hole symmetry of the half-filled Landau level implies that the composite fermion is a Dirac particle, characterized by a Berry phase of  $\pi$  around the Fermi surface. Physical consequences are discussed.

**Presenter:** SON, Dam Thanh

**Session Classification:** Morning session