

New Evidence for Anyons: Collisions and Braiding

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Fermions and bosons are fundamental realizations of quantum statistics, which governs both the symmetry of the wave function under the interchange of particle coordinates and the probability for two particles being close to each other spatially. Anyons in the fractional quantum Hall effect are an example for quantum statistics intermediate between bosons and fermions. Two recent experiments have provided evidence for such exotic anyonic statistics: the collision of anyons in a mesoscopic setup has demonstrated that anyons indeed have a reduced spatial exclusion as compared to fermions, and the symmetry of the quantum mechanical wave function for anyons has been measured directly by braiding anyons around each other in a Fabry-Perot interferometer. I will focus on the theoretical description of anyon collisions, which provides an interesting application of non-equilibrium bosonization.

Presenter: ROSENOW, Bernd