

Can charge measurements identify the $\nu=5/2$ state?

Misha Yutushui, Ady Stern, and David F. Mross

Weizmann Institute of Science, Herzl 234, Rehovot, Israel

We propose an experiment to identify the topological order of the $\nu=5/2$ state through a measurement of the electric conductance of a mesoscopic device. Our setup is based on interfacing $\nu=2$, $5/2$, and 3 in the same device. Its conductance can unambiguously establish or rule out the particle-hole symmetric Pfaffian topological order, which is supported by recent thermal measurements. Additionally, it distinguishes between the Moore-Read and anti-Pfaffian topological orders, which are favored by numerical calculations.