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Status of Experiments on the 5/2 Quantized Hall State: A Theorist's View[1]

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A number of experiments have been proposed, which, at least in principle, should clarify the nature of the fractional quantized Hall state at filling fraction 5/2. For example, experiments might measure the spin polarization of the ground state and the charge of the elementary quasiparticles, and could test whether the quasiparticles indeed obey non-Abelian statistics, as predicted by the Moore-Read model. These experiments are difficult, however, and their interpretation may be complicated by non-uniformities in the electron density and other problems, which also pose difficulties at simpler filling fractions. We shall discuss the current experimental situation, with these issues in mind.

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