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Proposed experiments to probe the non-abelian $\nu = 5/2$ quantum Hall state¹

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We propose several experiments to test the non-abelian nature of quasi-particles in the fractional quantum Hall state of $\nu = 5/2$. One set of experiments studies interference contribution to back-scattering of current, and is a simplified version of an experiment suggested recently by Das Sarma et al. A second set looks at thermodynamic properties of a closed system. A third set looks at electronic transport in an array of immobile quasi-particles. The first two sets are only weakly sensitive to disorder-induced distribution of localized quasi-particles.

¹Work done with B.I. Halperin (Harvard) and E. Grosfeld (Weizmann)