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Spin-Mode-Switching at the Edge of the nu=3 Quantum Hall System

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Quantum Hall systems are the simplest examples of topological insulators. The bulk of a quantum Hall system has a gap to all charged excitations, and all charge conduction occurs at the edges. Typically, these edges are chiral, they carry current only in one direction. In real samples, as the confining potential at the edge is softened, the edges can undergo reconstruction, which means the number and chirality of the edge modes can change, despite the bulk being inert. I will discuss the general phenomenon of reconstruction, which is driven by electrostatic considerations, and end with an example of a novel type of reconstruction in which exchange, rather than electrostatics, plays the dominant role.