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Noninvasive Probe of Charge Fractionalization in Quantum Spin-Hall Insulators ION GARATE, KARYN LE HUR, Yale University — When an electron with well-defined momentum tunnels into a nonchiral Luttinger liquid, it breaks up into two separate wave packets that carry fractional charges and move in opposite directions. Observing this phenomenon has proven difficult, in part due to single-particle and plasmon backscattering caused by measurement probes. In this talk we propose a topological insulator RC circuit that might be ideally suited for detecting fractional charges directly and in a noninvasive fashion.

Ion Garate
Yale University

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