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Topological Flux Phases of Levin-Wen String-Net Models KAUSHAL PATEL, Univ of California - Santa Barbara, PARSA BONDERSON, Microsoft Station Q, KIRILL SHTENGEL, Univ of California - Riverside, STEVEN SIMON, Oxford — Levin-Wen string-net models provide exactly-solvable lattice models for gapped topological phases. We examine flux phases of these models, in which the lattice plaquettes contain a nontrivial flux instead of containing zero flux. In particular, we study Z_N and Ising flux phases. We find that the Ising σ flux phase is gapless, but nonetheless contains quasiparticles with topologically protected non-Abelian braiding statistics, thus providing an exactly-solvable model of a quasi-topological phase.

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