

Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Symmetry enriched string-nets: Exactly solvable models for SET phases LUKASZ FIDKOWSKI, Stony Brook University, CHRIS HEINRICH, University of Chicago, FIONA BURNELL, University of Minnesota, MICHAEL LEVIN, University of Chicago — We construct exactly solvable models for a wide class of symmetry enriched topological (SET) phases. Our construction applies to 2D bosonic SET phases with finite unitary onsite symmetry group G and we conjecture that our models realize every phase in this class that can be described by a commuting projector Hamiltonian. In particular, our construction realizes onsite the Z_2 exchange symmetry of the charge and flux excitations in a model with toric code topological order. More generally, our construction makes use of a correspondence between so-called G -extensions of a fusion category C and the braided G -crossed extensions of its quantum double.

Lukasz Fidkowski
Stony Brook University

Date submitted: 10 Nov 2016

Electronic form version 1.4