

Abstract Submitted  
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**Construction of non-Abelian topological insulators using non-Abelian bosonization** PO-HAO HUANG, Boston University, JYONG-HAO CHEN, Paul Scherrer Institute, PEDRO GOMES, Universidade de Sao Paulo, TITUS NEUPERT, Princeton University, CHRISTOPHER MUDRY, Paul Scherrer Institute, CLAUDIO CHAMON, Boston University — A way to construct 2D topological insulators and superconductors is to couple an array of wires. The advantage of this construction is that one can use bosonization. Many 2D integer and fractional topological quantum states have been proposed using Abelian bosonization. In this talk we show how to use non-Abelian bosonization to construct non-Abelian topological insulators and superconductors in 2D. With the help of conformal field theory, we construct topological states whose edge states are described by coset theories of the Wess-Zumino-Witten model. In this construction, all the interactions we use to gap the bulk are physical, i.e. tunneling of electrons and current-current interactions.

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