

# Boson-fermion duality with subsystem symmetry

*Wednesday, 7 December 2022 15:20 (20 minutes)*

In this talk, I will introduce an exact duality in  $(2 + 1)d$  between the fermionization of a bosonic theory with a  $Z_2$  subsystem symmetry and a fermionic theory with a  $Z_2$  subsystem fermion parity symmetry. A typical example is the duality between the fermionization of the plaquette Ising model and the plaquette fermion model. I will establish the exact duality on the lattice by using the generalized Jordan-Wigner map, with a careful discussion on the mapping of the twist and symmetry sectors. This motivates us to introduce the subsystem Arf invariant, which exhibits a foliation structure.

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**Session Classification:** Parallel session A