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Coupled wire model of symmetric Majorana surfaces of topological superconductors I: 4-fermion gapping interactions SHARMISTHA SAHOO, ZHAO ZHANG, JEFFREY TEO, Univ of Virginia — Time reversal symmetric topological superconductors in three spatial dimensions carry gapless surface Majorana fermions. They are robust against any time reversal symmetric single-body perturbation weaker than the bulk energy gap. We mimic the massless surface Majorana's by coupled wire models in two spatial dimensions. We introduce explicit many-body interwire interactions that preserve time reversal symmetry and give energy gaps to all low energy degrees of freedom. The gapping 4-fermion interactions are constructed by interwire Kac-Moody current backscattering and rely on the fractionalization or conformal embedding of the Majorana wires.

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