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**Exact Solution to Interacting Kitaev Chain at Symmetric Point**

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— Kitaev chain model with nearest neighbor interaction  $U$  is solved exactly at the symmetry point  $\Delta = t$  and chemical potential  $\mu = 0$  in open boundary condition. By applying two Jordan-Wigner transformations and a spin-rotation, such a symmetric interacting model is mapped to a non-interacting fermion model, which can be diagonalized exactly. The solutions include topologically non-trivial phase at  $U < t$  and topologically trivial phase at  $U > t$ . The two phases are related by dualities. Quantum phase transitions in the model are studied with the help of the exact solution.

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