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Majorana chain coupled to a microwave cavity MIRCEA TRIF, YAROSLAV TSERKOVNYAK, Department of Physics and Astronomy, University of California, Los Angeles, California 90095, USA — We study the Majorana end-states in a one-dimensional Kitaev model in the presence of a microwave cavity. We analyze both the resonant and off-resonant coupling to the cavity for different cavity states. In the resonant regime, we find that the topology of the system can be modified depending on the number of photons in the cavity, while in the off-resonant regime (large detuning), the cavity could be used to detect the topological transition from a non-trivial to trivial state, being thus an optical alternative to the transport-based detection of the transition point. We also analyze the effects of the coupling to the cavity on the braiding of the emerging Majoranas.

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