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Condensation transitions in critical spin chains VILLE LAHTINEN,
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(KTH), Stockholm, JUHA SUORSA, Nordita, Royal Institute of Technology (KTH),
Stockholm, EDDY ARDONNE, Stockholm University — We show that two well
known one-dimensional spin chains, namely the XY spin chain and the transverse
field Ising model with only next-nearest neighbor interactions, can be related at
their critical points via an exact mapping. For periodic boundary conditions, the
two chains only differ by a boundary term, which accounts for the differences in
the critical behavior. We argue that the boundary term induces a “condensation
transition,” which is closely related to condensation transitions between gapped
two-dimensional topological phases.

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