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Topological phases and quenches in spin-ladder systems SMITHA VISHVESHWARA, WADE DEGOTTARDI, Univ. of Illinois at Urbana-Champaign, DIPTIMAN SEN, Indian Institute of Science — We show that a ladder version of Kitaev's honeycomb model can be directly mapped to a one-dimensional p -wave superconducting system. The ladder system is characterized by Z_2 vortices at every unit cell; the presence of vortices is encoded in the sign of the local chemical potential in the p -wave system. Compared to recently studied phases in topological superconductors, we show that certain vortex patterns in this ladder system can result in new topological phases and can alter the universality classes for associated phase transitions. We discuss the effect of performing time-dependent quenches in these new phases.

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