

## Stability of topological solitons in SSH Model under non-Hermitian deformations

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The SSH model, describing a one-dimensional chain of atoms or sites with alternating coupling strengths, exhibits topological solitons in the form of domain walls or edge states. These topological solitons are the results of the topological nature of the SSH model, and different symmetries can protect the existence and stability of these solitons. In this work, we explore the effects of non-Hermitian perturbations on the stability and behaviour of these solitons by investigating the symmetries of the underlying system. Furthermore, we explore the interplay between non-Hermitian perturbations and other external parameters, such as disorder or lattice modifications. We investigate how these additional factors affect the robustness and stability of the topological solitons and their associated edge states in different configurations of soliton defects in the SSH model.

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