

Chiral solitary waves in a nonlinear topological insulator model

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An outstanding challenge in the field of topological insulators is the realization of nonlinear systems that support coherent traveling waves. Highly nonlinear lattices can suffer from significant radiation losses due to Peierls-Nabarro effects. In this talk a nonlinear tight-binding model that supports robust traveling edge states is proposed and examined. This system possess a nontrivial local Chern topology and soliton-like states. This talk will also detail the inelastic interaction when a traveling solitary wave collides with a stationary mode.