# Switching via Wave Interaction in Topological Photonic Lattices

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## Abstract

The search for novel phenomena in photonic waveguides centers on engineering systems that feature unique dispersive properties including the study of topological (global) properties of the spectrum. The interface between two lattices with differing topological properties supports multiple protected interface modes that travel unidirectionally along the interface. Switching can occur when these interface modes reach the edge of the lattice when the light splits into waves traveling in two directions. The incoming mode, traveling along the interface, can be directed to travel entirely or partly along either lattice edge with the switching direction based on suitable mixing of interface modes.