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DEPARTMENT OF MATHEMATICS

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Mathematics of in-gap interface modes in photonic/phononic structures by

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ABSTRACT

The developments of topological insulators have provided a new avenue of creating interface modes (or edge modes) in photonic/phononic structures. Such created modes have a distinct property of being topologically protected and are stable with respect to perturbations in certain classes. In this talk, I will first review mathematical results on the existence of interface modes, and then report three recent results. The first result is on the creation of a in-gap interface mode that is bifurcated from a Dirac point in a one-dimensional system. The second is a bulk-edge correspondence type result for one-dimensional systems with inversion symmetry. Its application in dislocation systems is also presented. The last one is on the creation of a in-gap interface mode that is bifurcated from a Dirac point in a two-dimensional waveguide.



~ALL ARE WELCOME~

