Abstract:

In this talk, we present the band gap formation and the existence of localized nonlinear modes of the underlying nonlinear Schrödinger equation (NLS) with two dimensional irregular lattices, possessing dislocations, defects and quasicrystal structures. We next investigate vortex solitons on quasicrystal lattices. We use a spectral fixed-point numerical scheme to obtain the nonlinear localized modes and vortex solitons. By using direct computational simulations, stability properties of fundamental and vortex solitons are investigated.

References: