

Solitons in PT -symmetric nonlinear lattices

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Abstract:

We discuss the existence of localized nonlinear modes in PT -symmetric nonlinear lattices. The system considered reveals a number of unusual properties. Thus, unlike other typical dissipative systems it possesses families (branches) of solutions, which can be parameterized by the propagation constant. Relatively narrow localized modes appear to be stable, even when the conservative nonlinear lattice potential is absent, while broad modes may be unstable. Finally, the system supports stable multipole solutions despite the fact that refractive index is uniform.