



High Energy Physics - Theory

Bound states of PT-symmetric separable potentials

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All of the PT-symmetric potentials that have been studied so far have been local. In this paper nonlocal PT-symmetric separable potentials of the form $V(x,y)=i\epsilon[U(x)U(y)-U(-x)U(-y)]$, where $U(x)$ is real, are examined. Two specific models are examined. In each case it is shown that there is a parametric region of the coupling strength ϵ for which the PT symmetry of the Hamiltonian is unbroken and the bound-state energies are real. The critical values of ϵ that bound this region are calculated.

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