PT-Symmetry of Quantum Isotonic Oscillator in Bicomplexified Phase Space

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ABSTRACT

We investigate bicomplex Hamiltonian governed by isotonic oscillator in the framework of an analogous version of the Schrodinger equation. Since in such a setting different types of conjugates of bicomplex numbers appear, each defines a separate class of time reversal operator. We are thus in a position to explore the corresponding extensions of parity (P)-time (T)-symmetric models by generalizing the concept of an extended phase space. Some interesting properties are uncovered for the new types of PT symmetries in this regard.