$\mathcal{PT}$ symmetry and supersymmetry

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Résumé

An elementary introduction into a new approach to quantum mechanics. We shall review its main ideas and short history and present a few transparent examples for illustration, with emphasis on the following merits of the new formalism :

(1) a broadening of the class of the eligible phenomenological Hamiltonians,

(2) a clarification of the relationship between the bosonic and fermionic states,

Merit (1) will be shown related to the weakening of the Hermiticity of the Hamiltonian (often called $\mathcal{PT}$ symmetry). Point (2) will offer a new interpretation of the exactly solvable harmonic oscillator within the so called supersymmetric framework.

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