

The Pauli equation with non-Hermitian PT-symmetric boundary conditions

Radek Novák

FNSPE, CTU in Prague

The spectrum of a non-Hermitian Hamiltonian in the Pauli equation is explored. Special emphasis is paid to the definition of the Hamiltonian with the quadratic form using the first representation theorem. Many cases of possible boundary conditions can be proven to be Hermitian and thus lead to the reality of the spectrum. This also applies in one case where both components of the spinor are interdependent. Furthermore, the reality of the spectrum holds also for another PT-symmetric boundary conditions.