

Tanaka, Toshiaki

\mathcal{N} -fold supersymmetry in quantum systems with position-dependent mass. (English)

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The author of this interesting paper gives the framework of \mathcal{N} -fold supersymmetry in one-body quantum mechanical systems with position-dependent mass (PDM for short). The equivalence to weak quasi-solvability holds in the PDM case. A general procedure to construct a \mathcal{N} -fold supersymmetric PDM system is developed. As a result it is obtained the general form of type $A\mathcal{N}$ -fold supersymmetry in PDM quantum systems. It turns out that the framework of \mathcal{N} -fold supersymmetry is quite powerful also in searching quasi-solvable PDM Hamiltonians. A pair of almost isospectral PDM Hamiltonians in the framework of \mathcal{N} -fold supersymmetry is obtained as well.

Reviewer: [Dimitar A. Kolev \(Sofia\)](#)

MSC:

[81Q60](#) Supersymmetry and quantum mechanics

Cited in **1** Review
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supersymmetry; quantum systems; position-dependent mass (PDM); Hamiltonian

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