

This is a review text file submitted electronically to MR.

Reviewer: Znojil, Miloslav

Reviewer number:

Address:

NPI ASCR,
250 68 Rez,
Czech Republic
znojil@ujf.cas.cz

Author: Lavagno, A.

Short title: Deformed quantum mechanics and q -Hermitian operators.

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Primary classification: 33D90

Secondary classification(s): 46E20 81S99 33D65 39A13 42C15 46C50 47B39 81S05

Review text:

Compact and neat presentation of a fresh idea – either a proposal of a new family of Schroedinger equations for quantum theory or a proposal of a new realization of Hilbert spaces. For accelerated reading I would recommend skipping all the tutorials and start reading from the last section 6 which looks like just a summary of the standard principles of quantum mechanics. Using a slightly strange notation. The impatient reader is then recommended to search for definitions in section 5. There, the notation is explained as, in essence, converting the vector space of wave functions into the Hilbert space of states. Based on the introduction of a certain fairly specific and nonstandard inner product called q -deformed product. Now, the reader understands the point and may return, if necessary, to section 2 (which explains what is q -calculus and how one can get the Jackson's representation of q -deformed Heisenberg algebra) and sections 3 and 4 which recollect some author's older results on q -deformed Fokker-Planck equation which, via the Risken's stochastic quantization, enable him to arrive finally at the q -deformed Hamiltonian (34).

Comments to the MR Editors: AMS classification is not sufficient: very original paper - proposal of a new family of Schroedinger equations for quantum theory (81Pxx) and proposal of a new realization of Hilbert spaces (46Cxx or Exx)