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Review text:

The authors blend the three sources of inspiration. Firstly, they contemplate the "one-dimensional" (i.e., ordinary, first-order, two-component) Dirac eq. (2.3) of ref. [52] and eliminate one of the components yielding their initial "Schroedinger-like" (i.e., ordinary, second-order) linear differential eq. (2.6). Secondly, they employ a change of variables and make their choice of the two arbitrary "input" interaction-characterizing functions $v(x)$ and $M(x)$ in such a manner that the latter equation gets solvable in terms of classical orthogonal polynomials (in this step they successfully recycled the compact notation and approach as proposed by Géza Lévai in 1994 [48]). Thirdly, the usual "unitarity-of-evolution" (or, if you wish, "reality-of-potentials-and-masses") constraints are omitted as sort of obsolete, with an extremely vague citation of refs. [30] - [38] for the entitlement [which is NOT offered by any of these purely heuristic papers since the necessary and appropriate physical ground of the trick has only been provided later – see a minimal necessary explanation as summarized, for example, in my own recent compact review: M.Z., "Three-Hilbert-space formulation of Quantum Mechanics", SIGMA 5 (2009), 001 (arXiv:0901.0700)]. Moreover, in multiple instants, the all-encompassing text [involving wave functions constructed in terms of Jacobi (i.e., finite-interval) and generalized Laguerre and Hermite (i.e., infinite-interval) polynomials] seems technically incomplete. Indeed, the questions of boundary conditions are only too often hand-waved away. One can cite, for example, that "the wavefunction [(3.8)] becomes a constant [at a finite boundary point]". One might also feel puzzled by the unexplained reality-of-spectra constraints (like, e.g., (4.10)), or by the mind-boggling validity of the Laguerre-polynomial solutions over the whole real axis (in spite of the presence of the centrifugal-like singularity in the origin), etc.