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Review text:

Although the concept of the position-dependent effective masses has been introduced, in the context of semiconductor theory, by Oldwig von Roos as early as in 1983 (cf. the last cited paper [52]), its popularity looks culminating at present, partially also due to its appeal in the context of supersymmetric quantum mechanics. The paper under review is in fact a continuation of ref. [7] and it complements its results on a particle moving in a semi-infinite layer based either on the separability or on the shape-invariance techniques. The new approach turns attention to the ideas connected with the superintegrability of the model (also a growingly popular concept at present) and with the use of deformed parafermionic operators (cf. ref. [36] for details concerning the underlying algebra $QR(3)$ etc). The new point of view provides the third method of solution as well as some entirely new results (e.g., on matrix elements of one of the integrals of motion).