

This is a review text file submitted electronically to MR.

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Review text:

Once you admit that the mass of a nonrelativistic quantum particle may vary with its position (which may correspond, say, to its motion in an external field in a crystal, etc), you may immediately generalize the standard methods of solving Schroedinger equation. The authors picked up the Lie-algebraic approach (with Hamiltonians interpreted as Casimir operators) and showed how one may construct exact solutions in single dimension using representation theory and algebra $so(2,1)$. Their conclusions parallel the well known constant-mass classification scheme. Slightly beyond this framework, a supersymmetry-related remark is added on the existence of the so called intertwining relationship between the two different “partner” Hamiltonians.