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Short title: On the solutions of the position-dependent effective mass Schrodinger equation of a nonlinear oscillator related with the isotonic oscillator.

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Review text:

The postmodern story centered around supersymmetry (SUSY) tells us that although it started as a failure in experimental high-energy physics, it quickly found plan B as a successful and very productive solvable-model-building method in 1D quantum mechanics. For the present purposes the initial reference A. Sinha and P. Roy, *Czechoslovak J. Phys.* 54 (2004) 129 - 138 used the SUSY technique and produced the large family of solvable potentials including also the one mentioned in the title. The rediscovery (not using SUSY) of one particular member of the family came with Cariñena et al [1] in 2008. In a very detailed comment on reference [1] a return to SUSY origins has been added, by Fellows and Smith [23], in 2009. They were not aware of the Sinha's and Roy's paper – this I already mentioned in my recent comment MR 2525883 on the latter comment. Unfortunately, they did not pay attention to the 1D variable-mass Schrödinger equations to which SUSY is also known to apply extremely well. The paper under review partially fills the gap by taking the Cariñena's “newly discovered solvable nonlinear oscillator” and by allowing the variability of the “mass” $m = m(x)$. Making three concrete choices of the latter function, the authors construct three new models. Perhaps, it's time for some fourth team to rederive these results using SUSY.