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Review text:

Anharmonic oscillators are often studied in quantum mechanics, and their particular cubic Hamiltonian belongs among the most popular subjects of their perturbative as well as quasi-classical study. The Alvarez' review in J. Phys. A: Math. Gen. 27 (1995) 4589) may be recommended as listing its key properties including the famous pure reality of the energies at the purely imaginary couplings which was rigorously proved recently, by Dorey et al, in J. Phys. A: Math. Gen. 34 (2001) 5679. In this context Carlos Handy shows how the energies of this model (after an inessential re-arrangement of the potential) may be computed within his general linear-programming approach.

The method itself has already been tested using many specific Hermitian and non-Hermitian models. The paper describes its new explicit implementation for the example in question. This requires a number of technical steps [viz., proofs of lemmas, introduction of suitable transformed quantities (like squares of the wave function etc) which enable the author to suppress and avoid the so called missing moment difficulty via the so called positivity quantization, etc]. Still, its key idea [viz., a tricky transformation of the initial differential problem into the equivalent recurrences for certain Hamburger moments (=integral overlaps) of the wave functions] is conceptually simple enough to warrant the study (and reading the resulting publication).