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Review text:

The Swanson's Hamiltonian H (cf. eq. (1)) as proposed in ref. [10] is a remarkable solvable "next-to-harmonic-oscillator" quantum model which proves self-adjoint (as necessary) in many different nontrivial Hilbert spaces (sampled in ref. [9]). C. Quesne points out that the feasibility of an explicit and exact construction of at least some of these "physical" Hilbert spaces becomes a more or less trivial consequence of an application of a suitable ansatz and of the Baker-Campbell-Hausdorff formulae. The core of the idea is that H can be understood as a mere linear superposition of three generators of su(1,1) in a specific representation. This enables C. Quesne to conclude that also any other selection of the specific representation of su(1,1) would lead to another tractable generalized Swanson Hamiltonian. She lists several explicit examples for illustration, incorporating some differential single- and multi-particle oscillators (of a generalized Calogero type) as well as some new, non-standard multiboson models mimicking absorbtion/emission in nonlinear media.