

This is a review text file submitted electronically to MR.

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**Author:** This line will be completed by the MR staff.

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**Primary classification:** 81Q05

**Secondary classification(s):** 34A25

**Review text:**

A very standard exercise (viz., a variationally inspired numerical diagonalization of a Hamiltonian matrix) in an interesting new presentation. Firstly, the usual harmonic oscillator basis is Bogoliubov-transformed, with a parameter which minimizes the one-dimensional energy estimate. Secondly, all work is neatly performed in the creation and annihilation operator language (using tricks like Baker-Hausdorff formula in the generating-function evaluation of the matrix elements). Thirdly, as long as the technique allows the authors to work with the fairly high degrees  $M$  in the polynomial potentials  $V$ , persuasive illustrations and tests using the solvable models may be made, e.g., with  $M = 23$ .