

Quartic Many-body Anharmonic oscillators

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Abstract

Two quartic many-body anharmonic oscillators are introduced. One possesses the same symmetry as the Calogero (A_n rational) model with an anharmonic interaction. Another model has the symmetry of the three-body Wolfes (G_2 rational) model with an anharmonic interaction. Both models are studied in framework of the Lie-algebraic perturbation theory and by the variational method in the Weyl-invariant variables.