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## Periodic solutions for the generalized nonlinear oscillators containing fraction order elastic force

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### Abstract

Approximate periodic solutions for a conservative nonlinear oscillator containing  $x^{2(m-n)} + 1/2n+1$  elastic force are analytically obtained in this paper. He's Energy Balance Method (HEBM) and He's Variational Approach (HVA) are adopted as the solution methods. Correlation between the approximate frequencies and periodic solutions with the exact ones are verified and discussed. Two special cases are evaluated ©Freund Publishing House Ltd., International Journal of Nonlinear Sciences & Numerical Simulation.

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