

Abstract Submitted
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Preliminary Analysis of the Inverse-x Oscillator 'KALE OYEDEJI,
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inverse-x oscillator has the following equation

$$\ddot{x} + \frac{1}{x} = 0. \tag{1}$$

While the motion is singular at $x = 0$, nevertheless, all of the solutions are bounded in x and periodic in time. In addition to proving these behaviors, we calculate the exact period and present a (preliminary) analysis of the periodic solutions with respect to the construction of analytic approximations. The procedures used involve phase-space methods and harmonic balance.

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