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## $f(R)$ oscillating universes

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The purpose of this paper is to investigate the oscillatory behavior of the universe through the Schrödinger equation and a modified gravitational background described by the theory of  $f(R)$  gravity. Motivation for this stems from the proven periodic structure of the universe when described within the scope of the general theory of relativity. A further analysis of different  $f(R)$  toy models and the equation of state associated with each epoch of interest results in different behaviors for the wave-function of the universe.

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