# A periodic varying deceleration parameter in $f(R,T)$ gravity

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**Abstract:** The phenomenon of accelerated expansion of the present universe and a cosmic transit aspect is explored in the framework of a modified gravity theory known as $f(R,T)$ gravity (where $R$ is the Ricci scalar and $T$ is the trace of the energy momentum tensor of the matter content). The cosmic transit phenomenon signifies a signature flipping behaviour of the deceleration parameter. We employ a periodic varying deceleration parameter and obtained the exact solution of field equations. The dynamical features of the model including the oscillatory behaviour of the EOS parameter are studied. We have also explored the obvious violation of energy momentum conservation in $f(R,T)$ gravity. The periodic behaviour of energy conditions for the model are also discussed with a wide range of the free parameters.

**Keywords**:FRW metric; $f(R,T)$ gravity; periodic varying deceleration parameter

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