



SDI Review Form 1.6

Journal Name:	Archives of Current Research International
Manuscript Number:	Ms_ACRI_37691
Title of the Manuscript:	Time Periodic Varying Deceleration Parameter In Reconstructed $f(R,T)$ Gravity
Type of the Article	Original Research Article

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

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PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Compulsory REVISION comments	The author has investigated the string cloud with perfect fluid distribution in $f(R,T)$ gravity for FRW line element. In this article the author has used the time varying periodic deceleration parameter to obtained the exact solution of the modified field equations. The consider form of deceleration parameter provides a new way to understanding the dynamics of our Universe. Thus I hope the paper will be more readable if they work on the following suggested points. In view of suggestion points the authors should modify their manuscript, after that the article can be accepted for publication.	Dear Referee, thanks a lot for your valuable suggestions. According to your suggestions, we have revised our paper as follows:
Minor REVISION comments	I request the authors to improve the introduction part as well as the following points. 1. In first line of the introduction the author should write 20%, 75% and 5% respectively instead of %20, %75 and %5. 2. In line no 88, the authors have mention $k=0,+1,-1$ as constants but it should be k is a curvature parameter and $k=0,+1,-1$. 3. In recent time lot of work on $f(R,T)$ gravity is carried out by researchers(specifically cited articles). The authors should write how their work is different from other discussed works (cited articles) in the last paragraph of introduction. 4. For obtaining the exact solution of the modified field equations, authors have considered the time varying periodic deceleration. Here the authors should write the motivation behind considering such type of deceleration parameter and to make this paper more readable the authors should give more ideas about the deceleration parameter. 5. For the choice of $f(R,T)=R+2f(T)$, where $f(T)=\lambda T$, The modified field equations with perfect fluid distribution of energy momentum tensor takes the form $G_{ij}=(8\pi+2\lambda)T_{ij}+\lambda(\rho-p)g_{ij}$ For the choice of $f(R,T)=f_1(R)+f_2(T)$, where $f_1(R)=\mu R$, $f(T)=\mu T$, The modified field equations with perfect fluid distribution of energy momentum tensor takes the form $G_{ij}=\{(8\pi+\mu)/\mu\}T_{ij}+\{(\rho-p)/2\}g_{ij}$. If you look at the two equations then for the particular choice of $\lambda=1/2$ and $\mu=1$, they are overlap with each other. Thus the authors should explore the constants α_1 and α_2 except the provided values ($\lambda=1/2$ and $\mu=1$). What will be the effects of these arbitrary constants α_1 and α_2 on the physical parameter of the models? Then I hope it will be more general and more readable article.	1) We wrote 20%, 75% and 5% 20%, 75% and 5% in our manuscript. 2) We wrote $k=0,+1,-1$ as curvature parameter in our manuscript. 3) We have added the sentences "In this study, using time varying deceleration parameter, we consider string cloud with perfect fluid matter distributions for FRW space-time in reconstructed new $f(R,T)$ model as $f(R,T)=\alpha_1 R+\alpha_2 f_2(T)$. This new $f(R,T)$ model is important because it combines the first and second model of Harko et al. [3] also give general relativity solutions for $\alpha_1=1$ and $\alpha_2=0$ or $f_2(T)=0$." in the last paragraph of introduction. 4) We have added the sentences as "In this study we have three field equations and four unknowns. In order to solve equations (Error! Reference source not found.)-(Error! Reference source not found.) we use a time periodic deceleration parameter (DP). Because the sign of DP gives the accelerates of the universe or not [19]. To obtain the accelerated expansion of the universe many studies have been done using DP [19]. Berman [34] obtained a law of variation for Hubble parameter in general relativity for FRW universe model with a constant deceleration parameter (q) [19]. According to Berman; the DP can obtain values $-1 \leq q < 0$, corresponding to the accelerating expansion [34]. Various authors have researched with various cosmological models using constant deceleration parameter. Besides, it is important to study varying DP to explain expansion of the universe. Then in this study we have used oscillating time varying DP model. This model is given by; " in our manuscript. In this study we have aimed to use new time periodic oscillating DP to solve $f(R,T)$ theory then we used this new model. 5) You are right for only $\lambda=1/2$ and $\mu=1$ in $f(R,T)$ gravity. But in this study, we gave more general solutions with α_1 and α_2 parameters. we can easily see that the effects of the arbitrary parameters α_1 and α_2 in eqs. (15), (16).



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		The different values of α_1 and α_2, we get different new and known models in $f(R,T)$ gravity also GR theory(for example: in eq. (24) and (25)). Besides, From eqs. (18),(19) and (21), (22) we can see that the effect of the arbitrary parameter μ. Regards.
Optional/General comments		