|  |
| --- |
|  |
| Book Name: | [**Current Research Progress in Physical Science**](https://www.bookpi.org/bookstore/product/current-research-progress-in-physical-science-vol-1/) |
| Manuscript Number: | **Ms\_BPR\_4453** |
| Title of the Manuscript:  | **Observational Constraints on F(T , TG) Gravity with Hubble’s Parametrization** |
| Type of the Article | **Book Chapter** |

|  |
| --- |
| PART 1: Comments |
|  | Reviewer’s comment**Artificial Intelligence (AI) generated or assisted review comments are strictly prohibited during peer review.** | Author’s Feedback *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
| **Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.** | This publication offers observational constraints on F(T,TG) gravity, a modified gravitational theory grounded in torsion and teleparallel frameworks, which serves as an alternate explanation for the universe's accelerated expansion without dependence on a cosmological constant. This study utilizes Hubble's parametrization and examines coupled observational datasets (SNe-Ia, BAO, CMB, and H(z)) to provide new insights into the transition redshift at which the universe changes from a decelerating to an accelerating phase. The findings enhance comprehension of dark energy models and the feasibility of modified gravity theories as alternatives to ΛCDM. The study's conclusions concerning the equation of state parameter, energy density, and pressure establish a basis for subsequent research in both theoretical and observational cosmology. This study is significant for academics aiming to evaluate different gravitational theories using empirical data through the integration of theoretical modeling with real-world facts. |  |
| **Is the title of the article suitable?****(If not please suggest an alternative title)** | Yes, this titled is suitable for the manuscript. |  |
| Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here. | The abtract is very perfectly written. It is comprehensive to the article.  |  |
| **Is the manuscript scientifically, correct? Please write here.**  | Yes, It is scientifically written perfectly.  |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.****-** | Yes, all the references are sufficient and relavent with the manuscripts. |  |
| Is the language/English quality of the article suitable for scholarly communications? | Yes, the English language quality of the article is suitable for scholarly communication.  |  |
| Optional/General comments | It is perfectly written with complete explaintion. We appreciate the authors' submission of this insightful study on F(T,TG) gravity and its observational constraints. The manuscript is well-structured, and the methodology is clearly presented. The study contributes significantly to the ongoing discussion on modified gravity theories and their cosmological implications. We recommend this manuscript for the publication.  |  |

|  |
| --- |
| **PART 2:**  |
|  | **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)*** |
| **Are there ethical issues in this manuscript?**  | ***(If yes, Kindly please write down the ethical issues here in details)*** |  |

|  |
| --- |
| **Reviewer Details:** |
| **Name:** | **Praveen Kumar Dhankar** |
| **Department, University & Country** | **Symbiosis Institute of Technology, Symbiosis International (Deemed University), India** |