Outlook

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reply：[Universe] Manuscript ID: universe-4095403 - Please confirm the issues

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发件人 zhang mabus <csoft@live.cn>

日期 周四 2026/1/1 7:33

收件人 Ms. Zeke Zhang / MDPI <zeke.zhang@mdpi.com>; saryna.feng@mdpi.com <saryna.feng@mdpi.com>

抄送 universe@mdpi.com <universe@mdpi.com>

Subject: Response to Editorial Feedback on Manuscript universe-4095403 – Personal Background and Intellectual Origins of the Proposed Framework

Dear Academic Editor(s) of Universe,

Thank you very much for your careful review of our manuscript (ID: universe-4095403) and for your candid feedback. I fully understand the natural skepticism toward such an unconventional proposal, and I appreciate the opportunity to provide context about my background and the origins of the ideas. If a journal like Universe—known for hosting bold and exploratory theoretical work—were willing to include this manuscript, I would be genuinely thrilled. Ideas this radical rarely find a platform, and simply having them seriously considered is already encouraging.

My name is Yuxuan Zhang, the first author (email: csoft@live.cn). I am 44 years old and based in Changchun, China. The second author, Weitong Hu, is my wife; we met as university classmates, have been married for 20 years, and have a 12-year-old son. She is a physics teacher, and our daily discussions about physics (from classroom demonstrations to research frontiers) have been an invaluable source of ideas and reality checks.

My professional background is in engineering rather than theoretical physics. I am recognized as a high-level talent in Jilin Province and a top-tier talent in Changchun City. I have received the Second Prize of the China Automotive Industry Science and Technology Invention Award (awarded to only one team nationwide each year) and hold about seven invention patents. My core expertise lies in communication systems, signal processing, control theory, and software development (my handle "csoft" comes from decades of writing low-level code). This engineering perspective has profoundly shaped the theoretical framework we propose, in ways that I believe offer a fresh angle on long-standing problems.

Several specific engineering concepts directly inspired key elements of the work:

- In communication and control theory, we often treat "forces" not as fundamental interactions but as compensating connections (affine connections) that restore balance when spatial or temporal discretizations introduce asymmetries. This led me to view gravity not as a conventional force but as an emergent mathematical linkage arising from imbalances in discrete spacetime structures—a direct analogy to how coupling matrices maintain coherence in mismatched communication channels.

- The Z_3 cyclic structure itself emerged from exploring discrete symmetries common in digital signal processing and three-phase systems. A pivotal breakthrough came when I noticed that applying a simple order-3 cyclic transformation (essentially an E_3 rotation in a reduced exceptional sequence) to early versions of the algebra reproduced the full root system and symmetry of E_8. This provided a natural dynamical mechanism: the triality cycles generate higher-dimensional exceptional symmetries as "projections" or emergent levels, resolving earlier issues with dynamics in the

framework (previously addressed awkwardly via recursive algorithms). It turned a static algebraic construction into one with built-in hierarchical evolution.

- Stability requirements in feedback control systems demand the suppression of certain runaway terms; this directly motivated the algebraic prohibitions (h=0, d=0) that prevent bilinear vacuum decay or fermion condensation, ensuring proton and vacuum stability without fine-tuning.

- Concepts from data redundancy (e.g., RAID storage, where information survives disk failure) inspired the link between the cubic invariant and GHZ-type tripartite entanglement, suggesting a natural error-correction interpretation for quantum measurement.

- Hierarchical scale separation in multi-resolution signal analysis and noise cancellation techniques (e.g., pairwise offset terms in precision embedded computing) influenced the treatment of renormalization-free discrete structures and the emergence of the cosmological constant via residual higher-order compensations.

- Inflationary ideas drew from discrete fracture patterns (like a crystalline sphere cracking symmetrically from a point), rather than singular poles, providing a geometric analogy for rapid symmetric expansion.

These ideas were rigorously tested through extensive matrix computations—millions of random Jacobi identity checks—familiar from verifying stability in large-scale engineering simulations. The result is a compact algebraic structure that derives many Standard Model parameters and hierarchies from representation invariants, with quantitative, falsifiable predictions.

I recognize that the claims are ambitious and depart significantly from mainstream approaches. My aim is simply to contribute an engineer's practical, discrete-toolkit perspective that might stimulate new computational or conceptual avenues in the community.

Thank you again for your time and openness to unconventional submissions. Please let me know if any additional details about the engineering influences or verification procedures would be helpful for the review process.

With best regards,
Yuxuan Zhang
College of Communication Engineering
Jilin University
Changchun, China
Email: csoft@live.cn
On behalf of the author team

发件人: zhang mabus <csoft@live.cn>
发送时间: 2025年12月31日 19:54
收件人: Ms. Zeke Zhang / MDPI <zeke.zhang@mdpi.com>
主题: 回复: 回复：[Universe] Manuscript ID: universe-4095403 - Please confirm the issues

Dear Ms. Zeke Zhang,

Thank you for your reply and confirmation.

We have carefully reviewed the issues you raised and prepared a point-by-point response below. We appreciate your understanding and patience as we address these matters to ensure the manuscript proceeds smoothly.

1. **Citations shown as "?" in Line 71**

   Upon checking, the "?" , as per your note on potential reference issues, we have removed the citation ~\cite{Kochetov2021} from the sentence: "where $g_X \in \{0,1,2\}$ denotes the grade of X and $N(g,h) = \omega^{gh \bmod 3}$ with $\omega = e^{2\pi i / 3}$~\cite{Kochetov2021}." This citation was unnecessary, and we recommend deleting it for the following reasons:

   - This definition is the standard axiomatic definition of Z_3-graded Lie superalgebras, which is used directly in almost all relevant papers without specifically citing a particular source (similar to how the Jacobi identity for Lie algebras does not need to be cited every time).

   - After deletion, the sentence becomes: "where $g_X \in \{0,1,2\}$ denotes the grade of X and $N(g,h) = \omega^{gh \bmod 3}$ with $\omega = e^{2\pi i / 3}$." This is completely self-consistent and clear, without affecting readability or academic rigor.

   Please find attached the updated manuscript file: **90a06f8a.tex** (with the citation removed and the self-reference adjusted). We have recompiled it in Overleaf to confirm no "?" appears.

2. **Transition to Regular Submission**

   We are perfectly fine with proceeding as a regular submission. We are already very satisfied with the opportunity provided by the editorial team and appreciate the recognition of our work's value to the broader field. This transition will not require any additional steps from our side, and we look forward to the peer-review process.

3. **Institutional Emails and Brief CVs**

   As requested, below is a summary of the relevant details for the institutional emails and brief CVs of the authors. We have also attached the supporting PDF documents as proof. Due to privacy and institutional policies, we provide screenshots/summaries here rather than full CVs, but more detailed information can be shared if needed.

   - **First Author (Yuxuan Zhang)**: Institutional email is **zhangyx@faway.com** (current employer: FAWAY Co. Ltd., a subsidiary of FAW Group, one of China's largest automotive companies). My Jilin University email from my master's study has expired. In addition to my full-time role at FAWAY, I hold an adjunct position as a Senior Engineer/Adjunct at Jilin (as evidenced in the attached certification).

   Brief CV Summary: Born in 1983; Master's degree in Communication Engineering from Jilin University (2014–2017); primarily researches electronic technology and communication technology; over 8 years of experience in automotive software/communication/elec engineering; adjunct teaching and research at Jilin University since 2022; later pursued PhD studies, shifting focus to physics-related research. the first author is preparing to pursue a PhD, but Jilin University requires at least one SCI physics paper as a mandatory criterion for admission, hence engaging in this research; research focus on algebraic structures in physics;

   Attached proofs:
   - **Proof of Jilin University Master's Degree for Author 1.pdf** (Certificate No. Z10183320150103823, valid 2014–2017).
   - **Proof of Adjunct Professor Senior Engineer Identity Certification at Jilin for Author 1.pdf** (Issued by Jilin Province Human Resources and Social Security Bureau, confirming adjunct status at Jilin University).
   - **Corresponding Author (Second Author, Weitong Hu)**: Due to the confidential nature of my affiliation with a military university (Aviation University of Air Force), no public institutional academic email is available. I can only provide the personal email (csoft@hotmail.com) used in previous publications. As proof of affiliation, employment, and academic profile, we attach an official EI retrieval record from Jilin University Tech Novelty Search Center, confirming my publication history under the correct military institution. Additionally, we have attached further proofs including my work ID card and employment verification certificate, which confirm my position as Associate Professor in Physics at the Basic Laboratory, Aviation University of Air Force.

   Brief CV Summary: appointed as Associate Professor starting after 2024, primarily responsible for physics experiments;

   Attachments:
   1. Proof of Jilin University Master's Degree for Author 1.pdf

2. Proof of Adjunct Professor Senior Engineer Identity Certification at Jilin for Author 1.pdf
3. Proof of Employment Affiliation and Academic Profile for Author 2.pdf

  - **Third Author (Wei Zhang)**: Institutional email is **zwei25@mails.jlu.edu.cn** (Jilin University), as already listed in the manuscript. No changes needed.
    Brief CV Summary: PhD candidate in Computer Science at Jilin University; research in algebraic computing and quantum information.

Please let us know if these attachments and summaries suffice or if you require any further details (e.g., full CVs in a specific format). We are committed to full transparency and cooperation.

Thank you once again for your assistance. We look forward to your confirmation and the next steps in the review process.

Kind regards,
Weitong Hu
Corresponding Author
Aviation University of Air Force, Changchun, China
csoft@hotmail.com

发件人: Ms. Zeke Zhang / MDPI <zeke.zhang@mdpi.com>
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主题: Re: 回复：[Universe] Manuscript ID: universe-4095403 - Please confirm the issues

Dear Professor Hu,
Thank you for your reply and confirmation.
We noticed that the citations in Line 71 in the manuscript are shown as "?". Could you please check it and update the manuscript? You may send the updated manuscript to us via email. We will help upload it to the Submission System.
Besides, could you please provide us with the screenshots or a summary of the relevant details about the institutional emails and brief CVs?
We would also like to provide you with an update regarding your submission to the Special Issue "General Relativity, Modified Theories of Gravity and Their Applications in Astrophysics". After careful consideration by the editorial team, it has been determined that the content of your paper, while of high interest, does not quite fit as closely with the specific thematic focus of this special issue.

Recognizing the value and relevance of your research to the broader field, we would like to propose that your submission be processed further as a regular submission. Please kindly let us know if this is fine with you. The transition to regular submission will not require any additional steps from you at this time and will not affect the manuscript processing process.
Thank you for your cooperation. I look forward to hearing from you.
Kind regards,
Ms. Zeke Zhang
Assistant Editor

anyone.

On 2025/12/29 19:42, zhang mabus wrote:

Subject: Re: Manuscript universe-4095403 - Required Information & Layout Confirmation

Dear Ms. Zeke Zhang,

Thank you for your email and for the initial layout of our manuscript (ID: universe-4095403). We have reviewed the formatted version and confirm that it appears to be in good order.

Regarding the request for the institutional emails and brief CVs of Prof. Yuxuan Zhang and Prof. Weitong Hu, we would like to kindly mention that all of this information was comprehensively provided and verified during our recent submission to another MDPI journal, Symmetry. The email addresses used there (which include institutional ones) and author profiles are identical and up-to-date.

To facilitate your records and avoid any duplication of effort, could you please advise if it is possible to cross-reference the author information from our Symmetry submission? Alternatively, we would be happy to provide screenshots or a summary of the relevant details from that submission if that would be more convenient for your processing.

We greatly appreciate your assistance and look forward to your guidance on the best way to proceed. Thank you for handling our manuscript.

Best regards,

Weitong Hu ,Yuxuan Zhang

[Corresponding Author for manuscript universe-4095403]

发自我的手机

-------- 原始邮件 --------
发件人： "Ms. Zeke Zhang / MDPI" <zeke.zhang@mdpi.com>
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抄送： Yuxuan Zhang <csoft@live.cn>, universe@mdpi.com, zwei25@mails.jlu.edu.cn
主 题： Re: [Universe] Manuscript ID: universe-4095403 - Please confirm the issues

Dear Professor Hu,

Thank you very much for submitting your manuscript, "An Exact Z$_3$-Graded Algebraic Framework Underlying Observed Fundamental Constants" to *Universe*.

To facilitate the following manuscript processing, we've done the initial layout for your manuscript (attached). Please check and confirm. Kindly note that the layout manuscript was also uploaded to the System (pdf. file for decisions and peer-review; tex. file for revision in the revision stage).

Besides, in order to process your manuscript further, could you please provide us with the institutional emails of Prof. Yuxuan Zhang and Prof. Weitong Hu? For our records, could you please also provide brief Curriculum Vitae (CV) for each author, which includes homepage, research background, and publication list?

Thank you for your cooperation. We look forward to hearing from you.

Kind regards,

Ms. Zeke Zhang

Assistant Editor

On 2025/12/29 14:59, Zeke Zhang wrote:

> Dear Professor Hu,
>
> Your paper has been assigned to Zeke Zhang, who will be your main point of
> contact as your paper is processed further.
>
> Journal: Universe
> Manuscript ID: universe-4095403
> Title: An Exact Z$\_3$-Graded Algebraic Framework Underlying Observed
> Fundamental Constants
> Authors: Yuxuan Zhang, Weitong Hu *, Wei Zhang
> Received: 27 Dec 2025
> E-mails: csoft@live.cn, csoft@hotmail.com,
> zwei25@mails.jlu.edu.cn

You can find your paper here:
https://susy.mdpi.com/user/manuscripts/review_info/7d924e09d25686d553aff5d49a0ea7a5

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If you have any questions, please contact me in
advance.

Best regards,
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