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| Journal Name: | Asian Basic and Applied Research Journal |
| Manuscript Number: | Ms_ABAARJ_1774 |
| Title of the Manuscript: | A STUDY OF COSMIC RAY VARIABILITY DURING A SOLAR MAGNETIC CYCLE (SOLAR CYCLES 23 AND 24) |
| Type of the Article | Research article |

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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 guidelines for the Peer Review process, reviewers are requested to visit this link:

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PART 1: Review Comments

| Compulsory REVISION comments | Reviewer's comment | Author's Feedback <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i> |
|---|---|--|
| Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part. | The article interprets solar measurement data from various observation stations and data sources. Statistical methods are used to filter out correlations from the measured values. The result is valuable and should be communicated to the research community. The manuscript suggests that there is a purposeful instruction behind it. | |
| Is the title of the article suitable? (If not please suggest an alternative title) | The title is suitable. | |
| 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. | My proposal for a last additional sentence in the abstract is a repetition of the final sentence of chapter 5 with a small addition, e. g.: "In summary, we find that for the complete Hale cycle we describe, the CR intensities are modulated to different extents during different phases of a solar cycle and that the modulation varies from one solar cycle to another." | |
| Are subsections and structure of the manuscript appropriate? | <p>The introductory part is well-written and provides a good introduction to the topic. Suggested changes in this chapter concern page 3, where two paragraphs are almost identical and the authors should decide which one can be deleted, and page 4, where the last sentence in the list should be reformulated into a question.</p> <p>Chapter 3 is very brief and could be extended by a few paragraphs.</p> <p>Chapter 4 contains a lot of information and is a challenge for the reader. Better readability could be achieved by making a few small changes. For example, by adding more subheadings, shorter paragraphs and clearly indicating in the body text which figure is being discussed. It would also be helpful if figures and tables were inserted close to the passage in the text where they are first referred to. Figures 12 to 16 could be optimized by showing only part of the data, be it maximums, minimums or averages.</p> <p>Chapter 5 could end more strongly if the working hypothesis of other research groups were taken up again at the end. For example, as follows in a new paragraph: "In summary, our analysis of the CR intensity variations during the ASC and the DSC phases of SC 23 and 24 indicates that CR intensities are modulated in varying degrees during different phases of the solar cycle, and also the modulation is distinct from one solar circle to another. If solar flares are assumed to be one of the causes of cosmic radiation, then computer simulations of the sun's magnetic field, such as those by a research group at Harbin Polytechnic University (C. Jiang et al., 2021), could point the way for our further research.</p> <p>"A fundamental mechanism of solar eruption initiation", C. Jiang et al.; Nature Astronomy, 2021</p> | |
| Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part. | The topic is well introduced and the background to the topic appears to be well researched. The authors' own statements are supported by the inclusion of many citations from literature. The authors refrain from speculation and describe in detail the connections they found. | |
| Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. | The references are recent and more than sufficient. | |
| <u>Minor</u> REVISION comments | The language quality is very good. | |
| Is the language/English quality of the article suitable for scholarly communications? | | |
| <u>Optional/General</u> comments | There are some punctuation errors and minor spelling mistakes. | |

PART 2:

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| | 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? | <i>(If yes, Kindly please write down the ethical issues here in details)</i> | |

Reviewer Details:

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| Name: | |
| Department, University & Country | |