Responses to Reviewers' Comments for Manuscript SPACE-D-23-00082

Maximum Allowable Current Determination of RBS By Using a Directed Graph Model and Greedy Algorithm

Addressed Comments for Publication to

Space: Science & Technology

by

Dr. Cheng Qian, on behalf of all authors

Dear Dr. Tian,

Please find enclosed the revised version of our previous submission entitled "Maximum Allowable Current Determination of RBS By Using a Directed Graph Model and Greedy Algorithm" with manuscript number SPACE-D-23-00082. We would like to thank you and the reviewers for the valuable comments which help improving the quality of our manuscript. In this revision, we have carefully addressed the reviewers' comments. A summary of main modifications and a detailed point-by-point response to the comments from Reviewers 1 and 3 (following the reviewers' order in the decision letter) are given below.

Sincerely,

Dr. Cheng Qian, on behalf of all authors

Note: To enhance the legibility of this response letter, all the editor's and reviewers' comments are typeset in boxes. Rephrased or added sentences are typeset in color. The respective parts in the manuscript are highlighted to indicate changes.

improve the general language expression during revision progress.

Authors' Response to Reviewer 1

Comment 1:

The authors should explain the most important achievements of the proposed method quantitatively, in the abstract.

Response: Thank you for the comment.

We appreciate the reviewer's valuable feedback and have carefully considered their suggestion. In response, we have re-written the relevant content in the abstract to provide a quantitative analysis of the most important achievements of our proposed method.

The revised abstract now highlights that our method not only achieves the same results as the traversal method but also demonstrates significantly improved computational efficiency. Specifically, our method achieves computational efficiency improvements ranging from 3000 to 75000 times, primarily depending on the number of switches involved. This enhancement in computational efficiency is a key advantage of our method.

Furthermore, our method stands out for its ability to accurately calculate the MAC of RBSs with arbitrary configurations, even in scenarios with random isolated batteries. This capability expands the applicability of our method to a wider range of scenarios and enhances its practical utility.

We believe that these quantitative achievements, as described in the revised abstract, effectively demonstrate the effectiveness and superiority of our proposed method.

Comment 2:

The literature review in the introduction section is very short, and the related works, especially the works published in recent years, have not been well reviewed and compared, and the conclusions about the existing research gaps have not been presented.

Response: Thank you for the comment.

Comment 3:

It is necessary for the authors to clearly state research contribution and achievements as bullet points at the end of the Introduction section.

Response: Thank you for the comment.

Comment 4:

The authors need to present the complexity of their proposed method and compare it with some other state-of-the-art or successful classic methods.

Response: Thank you for the comment.

Comment 5:

The authors don't discuss the limitations of the study correctly.

Response: Thank you for the comment.

Comment 6:

Some typos should be double check.

Response: Thank you for the comment.

Comment 7:

The author should explain more why solution quality of their proposed approach is much better than the others?

Response: Thank you for the comment.

Comment 8:

Authors should mention some novel works in the field in the introduction, specially refer to this 2023 reference: An efficient lightweight algorithm for scheduling tasks onto dynamically reconfigurable hardware using graph-oriented simulated annealing, which uses graph-based method. Mention and refer to it in the introduction section.

Response: Thank you for the comment.

Comment 9:

Authors need to explain about the accuracy, sufficiency and reliability of their results? How do they verify and validate the results?

Response: Thank you for the comment.

Comment 10:

Everything else is really good.

Response: Thank you for the comment.

We totally agree. We also added the following to the new version of the manuscript

> This really important sentence was added to the paper.