**Reply to the comments of Reviewer 1**

Happy Chinese new year. Thank you very much for your constructive suggestions, which improve our paper a lot. We sincerely hope that you will be satisfied with our reply. We have provided a revised version of the paper with the changes marked in detail. We have made minor adjustments to the formatting or spelling of the words where the text is underlined. We have made significant changes or added content where there is a yellow background. We sincerely hope that you will be satisfied with our reply.

**Question1:** Please write the titles with a capital first letter.

**Response1:** We have checked all the titles and made modifications as required.

**Question2:** The citation of "A practical guide to splines" is wrong. There is only one author and not two authors of the same name.

**Response2:** We apologize for the wrong format of the reference in the original manuscript. We have rechecked and adjusted the citation format of all references. The reference format was improved in this paper.

**Question3:** Please be consistent with the namig. For example, sometimes it is refered to figures as Figure, othertimes as Fig.

**Response3:** We have checked and adjusted all table names and figure names. We also corrected all the problems in the article, such as "figure" and "figure".

**Question4:** There are so many results, and with the simulation experiment, there is a very large set of resulting data. Why not conduct a proper statistical analysis to support the claim of the superiority of the proposed AMLI method in comparison to other similar interpolation approaches? As you have independent samples (as simulation runs are independent), you can perform one-way ANOVA/Kruskal-Wallis with proper posthoc tests. This would add another proof of the validity and effectiveness of your approach.

**Response4:** Thanks for your major comment. We initially considered using ANOVA/Kruskal-Wallis, but we did not use these methods, mainly because:

1. One-way ANOVA should satisfy the assumption that each aggregate follows a normal distribution. Although the noise we add is subject to a normal distribution, we cannot determine whether the noise of the original data is also normally distributed after being processed by the AMLI method.
2. One-way ANOVA requires the same variance for each aggregate, however, the variance is changed after the AMLI method, so that the variance of each aggregate is not the same.
3. Although Kruskal-Wallis does not require the overall population to follow a specific distribution, the main purpose of the method is to test whether more than two samples come from the same distribution. Even though we reject the original hypothesis, we do not believe that we can verify the validity of the AMLI method for sample optimization, because we only verify that the data simply belong to a different distribution before and after processing.

**Question5:** Table 3 needs to include information on when the proposed AM LI method is used and when not.

**Response5:** We are sorry for this error and have made changes as required.

Thank you again for your suggestions, we wish you a pleasant life.