Date: 30 Aug 2021
To: "Liang Chen" l.chen@whu.edu.cn
From: "MSSP" support@elsevier.com
Subject: Decision on Your Submission MSSP21-685
Attachment(s): Review_of_manuscript_MSSP21_685.pdf

Ref: MSSP21-685
Title: GNSS-based Displacement Detection Using Bayesian Inference for Deformation Monitoring
Authors: Nan Shen; Liang Chen; Ruizhi Chen

Dear Professor Chen,

Thank you for submitting your paper to Mechanical Systems and Signal Processing

I have considered the comments of the reviewers (appended below) and decided that the paper should be revised to take into account these comments.

When revising your manuscript please include a point-by-point response to all the reviewers' comments and ensure that all modified text is printed in red. If the response to the reviewers' comments is not complete and descriptive, I will be unable to make a prompt decision on the paper.

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Yours sincerely,
Mechanical Systems and Signal Processing

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Reviewer #2: The authors explored the assessment of the Bayesian inference model for displacement identification. In addition, the Bayesian model for multiple displacement detection is also proposed. However, the authors must consider the following issues before its publication.
1. Highlight is not expressed correctly. For example, "Displacement is an important parameter in engineering analysis" is just a background, not the focus of the article.
2. In the second section, the authors introduced some classical theories such as Bayesian inference and Monte Carlo algorithm. Is it necessary to expand them in detail? Instead of writing down all the theories, the authors' contribution should be emphasized.
3. Is Bayesian inference the first time used in GNSS based displacement detection? Compared with previous studies, what is the greatest benefit of using Bayesian inference? The authors should explain it in detail.
4. In the introduction, the author points out that there are more researches on long-term displacement detection based on GNSS, but less researches on short-term displacement detection based on GNSS. How does the authors define long-term and short-term? Is there any essential difference between the two detections? In my opinion, the data processing should not be fundamentally different.
5. The author proposes that the displacement can be determined in a short time by Bayesian inference. Compared with the previous method, how much faster is it? Clearer comparative results should be given.

6. With respect to the displacement control platform proposed in Figure 7, what is the displacement control accuracy? Please provide more information.
7. The expression should be improved.

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