

Reviewer 2

Thanks for your comments and suggestions, and here is our response.

This study delves into the estimation of Differential Code Bias (DCB) for the MetOP satellite. Both LSS and SHF methods were utilized to estimate the DCB for periods of one day and one hour. Despite the substantial significance of this topic for highly dynamic low Earth orbit (LEO) satellites, the manuscript presents several concerns:

1. The manuscript acknowledges the correlation between ionospheric conditions and DCB estimation; however, it lacks a comprehensive exploration of this relationship within the experimental section and estimation methodology.
5. Insufficient discussion revolves around the relationship between LEO DCB estimation, ionospheric variations, and spatial environmental changes induced by the dynamic nature of LEO satellites.

Thanks for your good comments or suggestion. Our results showed that the STD of the DCB in the active solar days is larger than this in the quiet solar days, which means that the DCBs are more stable in the quiet solar days. The details are presented in Table 1.

2. Enhancements are needed to ensure logical coherence within the introduction section for enhanced clarity and expression.

Further refinement of the manuscript is imperative, particularly in the sections concerning experimental design, results analysis, and discussion. These refinements are essential to address the a fore mentioned concerns, thereby enhancing the overall logical coherence and credibility of the article.

Thanks for your comments. We have revised the introduction in the MS to make it more logical.

3. In lines 204-205, it is stated that "DCB is assumed to remain constant within a day, with daily DCB estimation values for different time periods calculated and depicted in Figure 4 and Figure 5." Nonetheless, Figure 4 seems detached from this statement. Considering the context, Figure 4 would be more appropriately situated around line 159. This entails modifying the reference from Figure 3 in line 159 to Figure 4.

Thanks for your suggestion, and we have changed that in the MS.

4. The manuscript assesses outcomes using reference values from the COSMIC Data Analysis and Archive Center (CDAAC). Nevertheless, line 246 implies that these reference values lack precision, prompting inquiries about the practical implications of the entire analysis process.

Thanks for your comment. For the reference values from CDAAC, they are estimated by spherical symmetry assumption and there are only daily values. We imprecisely wrote these reference values with lack precision, and we have corrected our description in the revised MS.