

This paper presents a technique for estimating satellite and receiver DCBs on an epoch by epoch basis utilizing the BDS observation data and GIMs from DLR and CAS. A comparison is made between the estimated DCBs and the ones computed by DLR/CAS. Intra day stability and intra day fluctuation are presented for the estimated DCBs using both BDS-II and BDS III data.

Line 11: “the receiver DCB of BeiDou Navigation Satellite” This needs to be re-phrased to highlight the receiver DCBs are being estimated using the BeiDou system.

Line 23: Include a space between each in-text reference after “;”. Do it for all the future instances.

Line 30: Put a space between an in-text reference and the other text.

Line 31: Replace “region” with “regional”.

Line 33: As per your stated reference, it’s called “IGGDCB” where IGG stands for Institute of Geodesy and Geophysics. Please review.

Line 45-46: “It should be noted that some of the” Sentence needs to be rephrased to make it clearer.

Line 49: “may be various” needs to be replaced with “may varies”

Line 52: “by Li et al. (2018)” instead of “Li (Li et al., 2018).”

Line 57: Point not clear. Please elaborate.

Line 60: “The rest of the paper ...” instead of “ This rest of the paper ...”

Line 65: “are presented” instead of “ are shown.”

Line 78: Put a full stop after receiver r i.e. “ r . The slant total electron content can be converted to ...”

Line 81: Put a numerical value against “ R ” and “ H ”. Refer to Schaer (1999).

Line 82: Get rid of “the” after “corresponding.”

Line 94: Put the equation like this: $m = m_1 + + m_r$. It would have been better to use the subscripts here like m_1, m_2, m_r .

Line 102: Put a space between 20° and cutoff.

Line 106-109: How has this been carried out? Existing software or new software written. Please add some information about it.

Line 117: “And the corresponding” Don’t start a sentence with the conjunction ‘and’. Remove all future instances.

Line 118: “epochs” instead of “epoch.”

Line 127: What is the period/duration over which this mean is computed? It must be stated somewhere in the text.

Line 135: It should be “receiver DCB” instead of “receive DCB”.

Figure 4 and Figure 5: Put labels to differentiate between CAS and DLR based estimation.

Figure 7: Have you tried comparing the trend of the estimated DCBs with the GIM you have used? After all, GIMs have certain accuracy. The ionosphere follows this pattern of being least active during the night to highly active during the day. So, this could influence the estimation process and one might be able to pick this trend by comparing the plotting the estimated DCBs against the ionospheric TEC derived from the GIM.

Comment# My experience of working with DCBs is that these are quite stable over time and especially in a controlled environment. One can see big fluctuations if there is some hardware problem in the receiver circuitry. In my opinion, most of these MGEX stations are in a relatively controlled environment, so the chances of all the receivers behaving in the same manner are quite low. It would be good to explore this area further.

Please try plotting and comparing the DCBs for the stations which are utilising the same receiver type. Sept PolRx5 could be good option with data available from 31 stations. I expect to see close results for these stations, no identical.