



Accuracy assessment of BDS precision orbit determination and the influence analysis of site distribution

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Abstract: BDS precision orbit determination is a key content of the BDS application, but the inadequate ground stations and the poor distribution of the network are the main reasons for the low accuracy of BDS precise orbit determination. In this paper, the BDS precise orbit determination results are obtained by using the IGS MGEX stations and the Chinese national reference stations [U+FF0C] the accuracy of orbit determination of GEO, IGSO and MEO is 10.3cm, 2.8cm and 3.2cm, and the radial accuracy is 1.6cm, 1.9cm and 1.5cm. The influence of ground reference stations distribution on BDS precise orbit determination is studied. The results show that the Chinese national reference stations contribute significantly to the BDS orbit determination, the overlap precision of GEO/IGSO/MEO satellites were improved by 15.5%, 57.5% and 5.3% respectively after adding the Chinese stations. Finally, the results of ODOP (orbit distribution of precision) and SLR are verified.

Key words: BDS precise orbit determination; accuracy assessment [U+FF1B] Chinese national reference stations [U+FF1B] reference stations distribution [U+FF1B] orbit distribution of precision