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BASIC NAVIGATION MESSAGE PARAMETERS COMPARISON BETWEEN BDS2 AND BDS3

**Abstract**

As the new technology realization of Beidou navigation satellite system, its data construction, parameters design, propagating models and algorithm are all improved. The paper compared the BDS2 with BDS3 in data construction, navigation message and propagating models, especially in ephemeris, satellite-clock error, data availability identification, device group delay, ionosphere correction, integrity and so on. What's more, the paper assessed the fitting precision of ephemeris and clock error and positioning accuracy with observation data. The results showed that the ephemeris fitting residual could be researched centimeter level precision, the ephemeris with 18 parameters is slightly better than the ephemeris with 16 parameters; as the combination with inter-satellite link data, the clock prediction accuracy had been improved dramatically, through the clock determination accuracy is approximately the same with the clock determination accuracy calculated by satellite-ground data; the combined positioning accuracy of BDS2 and BDS3 is better than the BDS2 positioning accuracy