BDS Satellite Orbit and Clock Determination based on MGEX Data

ZHAO Chunmei, HE Zhengbin,LI Qian,LI Ran

Beidou satellite navigation system (BDS) is being implemented by China, which is a self-development and independent global satellite navigation system. At present, there are four satellites in geostationary Earth orbit (GEO), five satellites in inclined geosynchronous orbit (IGSO) and 4 satellites in Medium Earth Orbit (MEO). Based on BDS observation data of 24 MGEX stations, we determined BDS satellite precision orbit and BDS clock. The results reveal that: using the three-day orbit solution, the RMS of MEO and IGSO satellites of orbit determination is about 30cm and the orbit accuracy in radial direction could be better than 10 cm; the RMS of GEO satellites in orbit determination is about 150cm and the orbit accuracy in radial direction also could be better than 10 cm; IGSO / GEO / MEO satellite clock accuracy are all superior to 0.1ns.