



Accuracy Analysis of Precise Point Positioning of Compass Navigation System Applied to Crustal Motion Monitoring

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Based on the observation data of Compass/GPS observed at five stations, time span from July 1, 2014 to June 30, 2016. Using PPP positioning model of the PANDA software developed by Wuhan University, analyzed the positioning accuracy of single system and Compass/GPS integrated resolving, and discussed the capability of Compass navigation system in crustal motion monitoring. The results showed that the positioning accuracy in the east-west direction of the Compass navigation system is lower than the north-south direction (the positioning accuracy is 3 times RMS), in general, the positioning accuracy in the horizontal direction is about 1 ~ 2cm and the vertical direction is about 5 ~ 6cm. The GPS positioning accuracy in the horizontal direction is better than 1cm and the vertical direction is about 1 ~ 2cm. The accuracy of Compass/GPS integrated resolving is quite to GPS. It is worth mentioning that although Compass navigation system precise point positioning accuracy is lower than GPS, two sets of velocity fields obtained by using the Nikolaidis (2002) model to analyze the Compass and GPS time series results respectively, the results showed that the maximum difference of the two sets of velocity field in horizontal directions is 1.8mm/a. The Compass navigation system can now be used to monitor the crustal movement of the large deformation area, based on the velocity field in horizontal direction.