

EGU2020-21088

<https://doi.org/10.5194/egusphere-egu2020-21088>

EGU General Assembly 2020

© Author(s) 2023. This work is distributed under the Creative Commons Attribution 4.0 License.



## Short-Term Realization of the ITRS with GNSS/SLR/VLBI/DORIS

**Changhui Xu**, Yingyan Cheng, and Yamin Dang

Institute of Geodesy and Geodynamics, Chinese Academy of Surveying & Mapping, Beijing, China (chxu@casm.ac.cn)

International Terrestrial Reference Frame (ITRF) is the realization of the International Terrestrial Reference System (ITRS), which can be used for the variety applications such as earth research, surveying and mapping. 2000 National Geodetic Coordinate System (CGCS2000) has been established and widely applied as a long-term reference frame in China, however, a software for short-term reference frame establishment is also developed to provide high accuracy applications based on the fusion of GNSS/SLR/VLBI/DORIS. We analyzed the covariance from sinex format of the GNSS/SLR/VLBI/DORIS and the quality of local ties. The errors between the local ties and the ITRF2014 within 1cm was 89% in north direction and 85% east direction. We used inner constraints as the method of datum realization and Helmert variance component estimation for giving the weight of different space geodetic GNSS/SLR/VLBI/DORIS. Finally, short-term terrestrial reference frame realization software can produce the weekly, monthly and annual frame products for high accuracy applications.