Repro3 – Reproccessing of 25 years of GNSS Data at CODE

CODE stands for Center for Orbit Determination in Europe and is a collaboration between the Astronomical Institute of the University of Bern (AIUB, Bern, Switzerland), the Federal Office of Topography (swisstopo, Wabern, Switzerland), the Federal Office of Cartography and Geodesy (BKG, Frankfurt am Main, Germany) and the Institute for Engineering for Astronomy and Physical Geodesy at the TU Munich (IAPG, Munich, Germany). Within the framework of this collaboration, operational contributions to the International GNSS Service (IGS) result since 1994.

In the course of the year 2020 data of about 300 globally distributed observing stations of the IGS was reprocessed for the period between 1994 and end of 2020. Thereby, more than 20'000 parameters out of more than about one Million single measurements were estimated. Consistent time series over more than 25 years were thus generated, in which up-to-date models for the GNSS data analysis were used. A compilation of the results may be found in the following just published paper:

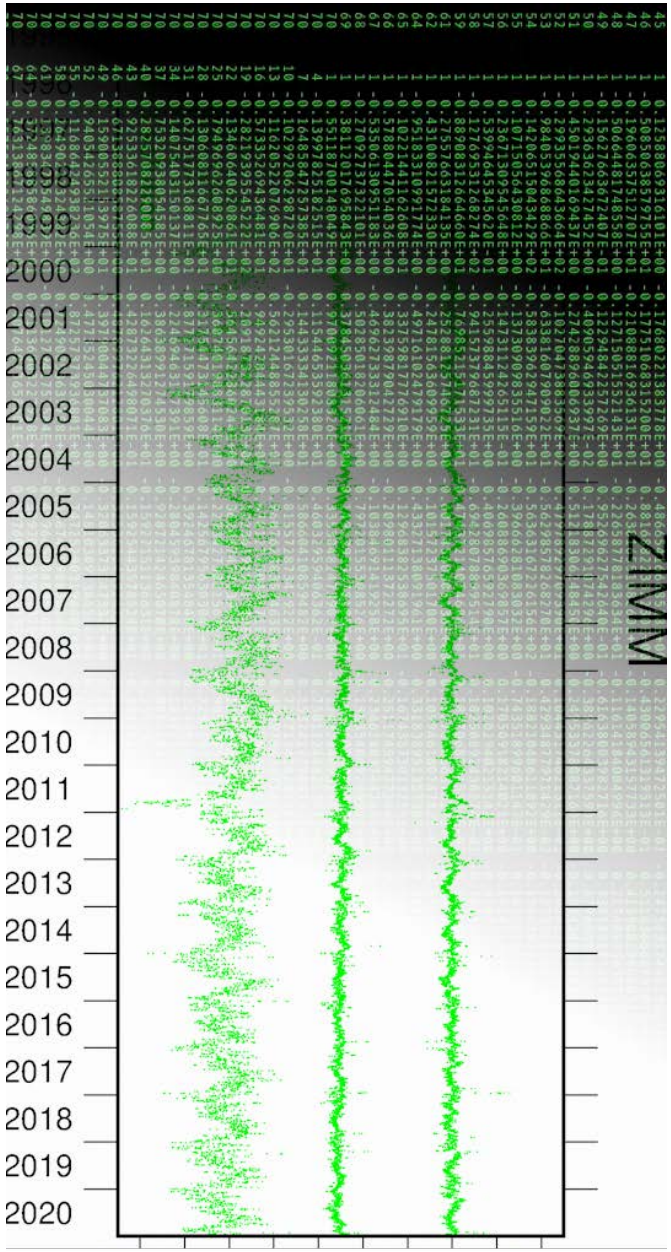
R. Dach, I. Selmke, A. Villiger, D. Arnold, L. Prange, S. Schaer, D. Sidorov, P. Stebler, A . Jäggi, U. Hugentobler; 2021: Review of recent GNSS modelling improvements based on CODEs Repro3 contribution. Advances in Space Research, Volume 68, Issue 3, 1 August 2021, pages 1263-1280. DOI 10.1016/j.asr.2021.04.046.

The results of this processing are publicly available through:

ftp:// ftp.aiub.unibe.ch/REPRO_2020 or http://www.aiub.unibe.ch/download/REPRO_2020

Thereby it deals among others with the orbital parameters of the GNSS satellites (GPS, GLONASS, Galileo), Earth orientation parameters, coordinates of the observing stations, satellite and receiver clock corrections, as well as parameters characterizing the state of the atmosphere's lower layers (tropospheric corrections). These data will be used for diverse applications.

The files were also sent to the IGS, where they will contribute to a combined product which integrates the solutions of several Analysis Centers. This combined product will be used to calculate high-precision coordinates and velocities of a global network of observing stations, which provides the stable geodetic foundation for scientific works of the next years (ITRF2020, as a realization of an Earth-fixed geocentric coordinate system).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