Annual summary of the Second Earth Orientation Parameters Prediction Comparison Campaign (2nd EOP PCC)

Tomasz Kur (Space Research Centre of the Polish Academy of Sciences), Justyna Śliwińska (Space Research Centre of the Polish Academy of Sciences), Jolanta Nastula (Space Research Centre of the Polish Academy of Sciences), Henryk Dobslaw (Section 1.3: Earth System Modelling, GFZ German Research Centre for Geosciences), Małgorzata Wińska (Warsaw University of Technology, Faculty of Civil Engineering) and Aleksander Partyka (Space Research Centre of the Polish Academy of Sciences)

Abstract. Earth Orientation Parameters (EOP) represent the rotational part of the transformation between the current releases of the International Celestial Reference Frame (ICRF) and the International Terrestrial Reference Frame (ITRF). The accurate determination of EOPs requires post-processing of observational data collected from various space geodetic techniques, which causes some delays in the provision of EOP solutions. However, in precise positioning and navigation it is crucial to receive instantaneous information about EOP in real time. Therefore, EOP short-term prediction has become a subject of increased attention within the international geodetic community.

In the light of the developments in the field of advanced geodetic data processing, modelling effective angular momentum functions and developing new prediction methods, a re-assessment of the various EOP predictions is currently pursued in the frame of the Second Earth Orientation Parameters Prediction Comparison Campaign (2nd EOP PCC). The campaign started in September 2021 and is run by the Space Research Centre of the Polish Academy of Sciences in cooperation with GeoForschungsZentrum and under the auspices of the International Earth Rotation and Reference Systems Service (IERS).

This presentation provides the status of 2nd EOP PCC one year after its beginning. We focus on the accuracy of EOP predictions based on mean absolute error and root mean square error computed for IERS 14 C04 solution as a reference. Additionally we present early assessment of the single predictions with use of median absolute error to identify outliers and check the potential improvements. Preliminary results show clear progress in combining modern prediction methods with data on the Earth's surficial fluids. The campaign will be continued until the end of the year 2022.