



## **Study on EPN Repro2 Time-Series Homogenization**

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European GNSS permanent network consists of around 250 GNSS stations which, among other things, contribute to the climate research by the tropospheric product improvement. Geodetic Observatory Pecny (GOP) as one of the Analysis Centers fully performed the 2nd reprocessing campaign of the whole EPN network for the period of 1996-2014.

Before providing the reprocessed data of all stations from the European GNSS permanent network for a climate research, it is necessary to investigate possible inhomogeneities that may be involved in the reprocessed time-series. For the purpose of change-point detection, which is the main objective in this work, we implemented a method of mathematical statistics based on a two-sample t-statistics with the underlying idea of comparing candidate series with a reference series. The reference series should optimally represent the true climatic behaviour of the parameter and should be free of artificial disturbances (e.g. free of change-points). The developed methodology included the preparation of an optimal model for the reference series, the data gap handling and outliers detection including their impact on the change-point detection.