



## **Nutation determination by means of GNSS: status and prospects**

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Study of precession-nutation of the Earth's axis in space allows the link between the inertial space-fixed and Earth-fixed reference systems; it also allows make inferences about the Earth's interior. This phenomenon is modelled through IAU200A/2006 precession-nutation model which takes into account the position of the major solar system bodies. Time-dependent corrections (celestial pole offsets) to this model are determined from Very Long Baseline Interferometry (VLBI) observations to extragalactic radio sources and are regularly disseminated by the IERS.

Unfortunately, GNSS techniques cannot directly access to the celestial pole offsets due to their correlations with the orbital elements of the satellites and the limitations in the modelling of the orbits. Nevertheless, GNSS data can be used to estimate the nutation rates, following the same approach that is used for GNSS-derived LOD estimation.

The purpose of this contribution is to review the contributions on this topic to date and to present the current status and future plans of the MATLAB program that is being developed by the authors based on the work of Kunliang Yao's PhD dissertation (2013) to produce the time derivatives of the coordinates of the celestial pole with high temporal resolution using GNSS data.