

Session title: G01 - Posters - Reference Systems and Frames

Session type: Poster Session

Symposium: G01

Presentation number: G01p-350

★ Abstract title:

Results of the GRGS numerical simulations for GRASP-like missions towards the GGOS objectives for geodetic references

A. Pollet¹, D. Coulot², R. Biancale³, V. Schott-Guimault¹, S. Nahmani¹, F. Perosanz⁴, F. Mercier⁴, F. Reinquin⁴, J.C. Marty⁴, S. Loyer⁵, J.M. Lemoine⁴, M. Mandeau⁶.

¹IPGP- IGN- Université Paris Diderot- Sorbonne Paris Cité- CNRS UMR 7154- GRGS, Equipe de Géodésie, Paris, France.

²IPGP- IGN- Université Paris Diderot- Sorbonne Paris Cité- ENSG- IMCCE- Observatoire de Paris- PSL Research University- GRGS, Géodésie, Paris, France.

³GFZ German Research Centre for Geosciences, Geodesy, Potsdam, Germany.

⁴CNES- UMR 5563 CNRS- Observatoire Midi-Pyrénées, Géosciences environnement Toulouse, Toulouse, France.

⁵CLS, Géodésie, Toulouse, France.

⁶CNES, Cnes, Paris, France.

Since 2011 and the Geodetic Reference Antenna in Space (GRASP) mission proposal by the JPL and the University of Colorado Boulder, using “multi-technique” satellites as “space-ties” is studied and a few proposals have been made in response to different space agency calls (GRASP – NASA EV2 , E-GRASP – ESA EE9, MOBILE – ESA EE10).

One of the main goals of these mission proposals is to achieve the objectives of 1 mm accuracy and 0.1 mm/year stability for the TRF realization needed by the geoscience community (GGOS, Meeting the Requirements of a Global Society on a Changing Planet in 2020, Plag and Pearlman, 2009).

In this study, we present the up to date numerical simulations carried out by the French Groupe de Recherche de Géodésie Spatiale (GRGS) regarding this type of satellite mission. In particular, the simulations carried out for the E-GRASP mission in response to the ESA EE-9 call have been significantly reassessed (new sampling and noise levels for SLR and VLBI measurements, new model of clock errors for DORIS, etc.).