REPORT ON THE ENS SOLUTION OF THE GEODYSSEA GPS MEASUREMENTS

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The complete data set from the two GEODYSSEA GPS campaigns (November 94 and April 96) were analysed at ENS, including data from additional stations observed in the main sessions and appended sessions in the Sulawesi area. The data were processed using MIT's GAMIT/GLOBK/FONDA package.
Software specificities will be detailed along with data editing and data processing strategies. The quality of the solution is assessed by the excellent repeatabilities (scatter of independant daily measurements) obtained both for the 94 and 96 campaigns for baselines as long as 10,000 km. The 2246 (resp. 2138) baselines measured in 94 (resp. 96) show mean repeatabilities of 3.9 (resp. 4.3), 5.8 (resp. 7.4), and 11.1 (resp. 16.7) millimeters on the North, East, and vertical component. The precision of the inferred velocities is therefore estimated around 5 mm/year.
Precision and accuracy of the ENS solution with respect to the combined solution will be presented. Especially, the influence of orbits (fixed precise IGS orbits vs. localy adjusted orbits), antenna phase center tables, and ambiguity resolution on the final solution will be discussed.
The GEODYSSEA solution shows a relatively poor agreement with the global models (ITRF/NUVEL1) for the fiducial stations used in the analysis (IGS' KIT3 TAIW TIDB TSKB YAR1 and AUSLIG's COCO KARR XMAS DARW). This result will be discussed in terms of real, short time scale, local, crustal deformations and/or large scale network deformations induced by erroneous external reference frames.

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