

International GLONASS Experiment

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Context

GLONASS is the Russian Global Navigation Satellite System. It is of interest to the IGS community for two main reasons: First, it is technologically very similar to the GPS system (even though there are some differences (different frequency for each satellite, no selective availability). Second, several projects already foresee combined uses of GPS and GLONASS for example, the European Global Navigation Satellite System (GNSS)?1 project for aviation and rapid topographic GPS applications for surveyors. In both cases, the question of interoperability of the two systems is raised (including terrestrial reference frames and precise synchronization issues).

Scientific Objectives

Though the GLONASS system is not fully operational (only a limited number of satellites are presently available), it was felt that there was a need for a global GLONASS observation (called International GLONASS Experiment or IGEX98) collocating the GLONASS receivers with permanent GPS sites of the IGS network.

The goal of this campaign is to investigate scientific uses of the GLONASS satellite for geodetic and geophysical applications and to try to solve the interoperability issues of the GPS and GLONASS systems. Precise GLONASS orbit estimation is a clear goal.

Report of Activity

In 1997, under the initiative of the International Association of Geodesy (IAG) subcommission for Precise Microwave Satellite Systems, a steering committee was formed that included the following individuals: Gerhard Beutler (Astronomical Institute, University of Bern [AIUB]), Werner Gurtner (AIUB), Guenter Hein (University FAF Munich [UdBM]), Ruth Neilan (IGS Central Bureau, Jet Propulsion Laboratory [JPL], California Institute of Technology), James Slater (National Imagery and Mapping Agency [NIMA]), and Pascal Willis (Institut Géo-graphique National [IGN]; Chair). A first meeting was organized at

the IAG Scientific Assembly (Rio de Janeiro, September 1997) and also at the American Geophysical Union meeting (San Francisco, December 1997), leading to an International Call for Participation that was agreed to by the IGS Governing Board and broadly distributed using IGS mail (see IGS Mail Message #1826).

The IGEX98 campaign will start 20 September 1998, and will continue for at least three months. It is a joint project of the IAG and the Commission on the Coordination of Space Techniques for Geodesy and Geodynamics (CSTG), the IGS, and the Institute of Navigation (ION). Additional information can be found on line at the following Web site: <http://lareg.ensg.ign.fr/IGEX>.