

Evaluation of the New Terrestrial Reference Frame ITRF2005 through Satellite Laser Ranging Analysis

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IERS (International Earth Rotation and Reference Systems Service) has released its newest solution of terrestrial reference frame, ITRF2005, in October 2006. Five years have passed since the release of its previous version ITRF2000. The contents are common in that the position and velocity vectors are provided for space geodetic stations of VLBI, SLR, GPS and DORIS. However, there are new features as follows.

Each analysis centre used to submit its solution directly to IERS, but the combination centres established for each space geodetic technique combine the solution from each analysis centre and the combined solutions are sent to IERS. Instead of submitting one long-term solution of position and velocity, weekly solutions of position are sent to IERS. The other important new feature is that Earth orientation parameters are now a part of the ITRF2005 solution.

Although we, NICT, have not contributed to the ITRF project this time, we test the ITRF2005 solution using the satellite laser ranging data to evaluate the usefulness of this new standard product.