



Stability and consistency of the SLR contribution to the ITRF

G. Bianco (1), V. Luceri (2), C. Sciarretta (3)

(1) ASI Centro di Geodesia Spaziale "G. Colombo", Matera, Italy, (2) e-GEOS SpA, Matera, Italy (3) Telespazio SpA, Roma, Italy (cecilia.sciarretta@telespazio.com)

The role of the Satellite Laser Ranging technique in maintaining the ITRF is quite critical: in ITRF2000 it realized, by itself, the origin and, jointly with VLBI, the scale. The SLR contribution to ITRF2005 has been a 13-year long time series of weekly, intra-technique combined station coordinates and daily EOP's (X-pole, Y-pole and excess Length-Of-Day (LOD)) estimated over 7-day arcs aligned with the GPS weeks, spanning the period January 1993 - December 2005. Each weekly solution has been obtained as a combination of individual solutions submitted by the official ILRS Analysis Centers (ASI, DGFI, GFZ, JCET, NSGF), as described in the official ILRS web site (<http://ilrs.gsfc.nasa.gov/>). Both individual and combined SLR solutions produced for the ITRF2005 contribution, have followed strict standards agreed upon within the ILRS Analysis Working Group to provide products of the highest possible quality. The inter-technique combination strategy for the current ITRF realization, based on the combined intra-technique solution time series from the international technique services (ILRS, IVS, IGS, IDS), requires a thorough analysis of the submitted solutions, either before and after the intra-technique combination: specific technique errors (e.g. system bias, inappropriate modelling) might affect the results and be difficult to remove in the inter-technique combination step. On the other hand, the followed analysis strategy, based on weekly coordinates determination, allows a point-wise monitoring of the quality of the SLR contribution and a deep investigation on the time behaviour of its characteristic products, i.e. origin and scale of the TRF. The stability and consistency of these products are discussed, both from the SLR time series (individual and combined) provided to ITRF2005 and from the extended contribution, in preparation,

based on the analysis of the whole 1983-2007 SLR dataset. The critical issues from this analysis will be presented to highlight the key points that SLR should take into account to contribute in the best possible way to the ITRF realization.