Towards an improved ILRS TRF contribution

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Submitted for Session/Theme 4

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Since January 2004 the ILRS official Analysis and Combination Centers provide IERS on Wednesday every week, individual SSC/EOP loosely constrained solutions, to be combined by IERS for the optimal generation of multi-technique SSC/EOP products. The individual solutions are based on the analysis of weekly batches of SLR data covering from Sunday to Saturday included. The combined products, loosely constrained SSC/EOP and ITRF-constrained EOP, are provided to IERS with a latency of less than 4 days with respect to the last SLR observations considered. A current pilot project is underway, to improve this turn-around time to two days and to increase the delivery frequency from once per week to once per day with a latency of two days.

While we are attempting to increase the number and frequency of our products, we are also reviewing the modeling used in our analysis of the data, to identify areas where our current models are lagging behind the generally accepted standards, in order to further improve also the quality of the ILRS products. This presentation will focus primarily on this topic, reviewing some of the standards and conventions applicable to the technique of laser ranging, the options we have, our current practice and what can be expected in the near future. Some of the individual topics to be discussed include orbital modeling (improved gravitational modeling), measurement errors (biases, calibration of timing devices, etc.), satellite-specific corrections (CoM offset), atmospheric delay modeling, and station-dependent models (geophysical fluids effects, local effects).