

## Sources of Systematic Errors

Chairs: Daniela Thaller, Toshimichi Otsubo, Matthew Wilkinson

- The session began by looking at time bias at stations as detected in results from the T2L2 mission. This feedback to stations has been informative, reliable and very valuable. Timing at the Wettzell station was then described in detail.
- Igor Ignatenko looked at the influence of local atmospheric conditions on SLR range error.
- As well as estimating range bias for LAGEOS, Daniel Koenig estimated range bias for the Etalon satellites to monitor the behaviour. At the current stage of processing, however, it does not result in an improved TRF solution.
- The aim for 1-mm ranging is a challenge for the ILRS. Removing bias at the station is important, but the remaining bias can be solved for in the analysis. Also, it is important to remember that stations with low single-shot precision **can still contribute** if enough data points are collected.
- Feedback to stations is valuable and stations should take this information on board. Two talks showed different methods developed to respond to a range residual dependency on normal point RMS. One from Wettzell used a deconvolution, Wiener filter to consistently define a point on the satellite response. And Herstmonceux used fixed, tight clipping about the LEHM.
- John Degnan presented a method for threshold detection to avoid multi-photon bias so that kHz stations can operate efficiently at high return rate.

The session also included 3 posters:

- *“Analyzing prediction quality with the Potsdam Time Bias Service”* Jens Steinborn and Sven Bauer. This poster describes the methods and the processes in use for the Potsdam time bias service, including the data handling, time bias calculation and website updates.
- *“Extended troposphere delay model dedicated for Satellite Laser Ranging”* Mateusz Drozdewski. This poster considers the horizontal asymmetry of the atmosphere above SLR stations and its impact on results.
- *“JCET Web Tools for the Assessment of the ILRS Network's Performance”* Erricos Pavlis. This poster describes the available web tools on the JCET webpages that present SLR analysis calculated coordinates, systematic error estimates and other metrics for each ILRS station.