

**Introductory talk: Target signatures of existing sub-cm targets and prospects  
for future SLR constellations**

T. Otsubo<sup>1</sup>, R. A. Sherwood, and G. M. Appleby<sup>2</sup>

<sup>1</sup> Hitotsubashi University, Japan

<sup>2</sup> SGF Herstmonceux, UK

[t.otsubo@r.hit-u.ac.jp](mailto:t.otsubo@r.hit-u.ac.jp)

The target signature effects of small spherical satellites, STARLETTE and LARES are investigated. The target response functions of these satellites are found to amount to a few cm by empirically fitting them to the single-photon full-rate residuals, resulting in nearly 1 cm difference between the leading edge and the centroid. The system dependence of their centre-of-mass corrections can range by this amount. This leads to the discussion of how to deal with and separate signature effects and potential system range-bias. By considering the various constellations of geodetic satellites, we seek to separate the determination of range bias from earth-scale parameters.