

New results on spin determination of BLITS from High Repetition Rate SLR data

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The nanosatellite BLITS demonstrates a successful design of the new spherical lens type satellite for Satellite Laser Ranging. The spin parameters of the satellite were calculated from more than 1000 days of SLR data collected from 6 High Repetition Rate (HRR) systems: Beijing, Changchun, Graz, Herstmonceux, Potsdam, Shanghai.

Analysis of 892 passes (September 26, 2009 - June 18, 2012) shows precession of the spin axis around orientation of the along track vector calculated at the launch epoch of the satellite RA=9h16m39s, Dec=43.1°. The spin period of BLITS remains stable with the mean value T_{mean}=5.613 s, RMS=11 ms. The incident angle between the spin axis and the symmetry axis of the body changes within 60° range.

The optical reflectivity of the satellite decreases over time; the obtained trend indicates 50% loss of the reflectivity (relative to Stella) in every 8 years.