

## **Accuracy Improvement to SLR network stations from Reference Frame Analysis**

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**Abstract.** The ITRF2020 Reference Frame Analysis includes estimates of non-geodetic signals in the SLR observations. Interpretation of these signals and the resulting data handling refinements yield improved orbit and station positioning. It has been established in recent work (Appleby, Rodriguez and Altamimi, JG 2016) that most stations in the ILRS network exhibit millimeter-level systematic errors. Each of the three types of SLR sites (Microchannel Plate (MCP), Single Photon (SP), and Compensated SP Avalanche Diode (C-SPAD)) exhibit different characteristics (Couhert et al., JG 2020). ILRS requirements to maintain high quality SLR data include the ability to perform extensive tests on-site (Otsubo and Genba, 13th. Int. Laser Ranging Workshop, 2002). Core ITRF SLR stations, including the NASA Mobile and Transportable MCP Systems, regularly monitor electronic characteristics for each satellite pass. Data features exceeding error specifications can be defined with close consideration of known engineering variables. This paper will discuss current accuracy for core stations and system development in the ILRS Network to maintain the millimeter requirement for geodynamic measurements.