Systematic SLR errors detected in precise orbit determination

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Toward the 1-mm-accurate terrestrial reference frame, all laser ranging stations and analysis institutes have to look into all kind of error sources. A random error will cancel out if one obtains large number of observations, but a systematic error remains and easily maps the geodetic products. We discuss what errors are allowed and what errors have to be monitored and eliminated. We then use the 2017-2018 laser ranging data from the worldwide laser ranging stations and relate the precise orbit determination residuals with various possible causes, such as intensity dependence, satellite dependence, station system/policy dependence, calibration, day-night or annual pattern. This presentation also serves as an introduction to the clinic session #3.