Modeling ILRS Barometric Accuracies using the Vienna Mapping Function (VMF)

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SLR tropospheric errors, in particular barometric errors, are elevation dependent and if unmodelled will negatively impact SLR station height estimates. To reduce systematic errors to less than 1 mm caused by barometer errors requires absolute barometric sensor accuracies of less than 0.15 hectopascal (hPa). Barometric errors of a few or several hPa were common in the SLR network prior to the mid 1990's.The proliferation of more accurate SLR meteorological sensors and more frequent sensor calibrations in the mid to late 1990's had a positive impact on our SLR data quality and SLR scale. In this paper we will discuss using two types of VMF data for optical wavelengths in identifying past, present, and future ILRS barometric measurement errors. We will also discuss an approach for modeling past barometric errors.