

## **EXPERIMENTAL STUDY OF GPS MULTIPATH DAY-TO-DAY REPEATABILITY**

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**Abstract:** The property that GPS site-dependent errors repeat themselves every sidereal day has been used extensively in deformation measurements to reduce the effects of GPS multipath. Exceptions have however been found where the signals do not repeat themselves very well from one day to the next. To better understand the repeatability or the variations in the repeatability of GPS multipath signals, we collect and analyse GPS observations on a static baseline over a time period of about six months. The observations are first reduced to generate the residual series. The residual series are then filtered to reduce the noise in the series. The cross-correlations between the filtered residual series of different days are calculated. The variations in the calculated correlations with time are then analysed. The possible reasons that may have caused the variations are finally discussed.