



## **A Study on the Estimation of the Scale Factor for Precise Point Positioning**

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Precise Point Positioning (PPP) technique is one of the most important subject in Geomatic Engineering. PPP technique needs only one GNSS receiver and users have preferred it instead of traditional relative positioning technique for several applications. Scientific software has been used for PPP solutions and the software may underestimate the formal errors of the estimated coordinates. The formal errors have major effects on statistical interpretation. Variance-Covariance (VCV) matrix derived from GNSS processing software plays important role for deformation analysis and scientists sometimes need to scale VCV matrix. In this study, 10 continuously operating reference stations have been considered for 11 days dated 2014. All points have been analyzed by Gipsy-OASIS v6.4 scientific software. The solutions were derived for different session durations as 2, 4, 6, 8, 12 and 24 hours to obtain repeatability of the coordinates and analyses were carried out in order to estimate scale factor for Gipsy-OASIS v6.4 PPP results. According to the first results scale factors slightly increase depending on the raises in respect of session duration.

**Keywords:** Precise Point Positioning, Gipsy-OASIS v6.4, Variance-Covariance Matrix, Scale Factor