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On the height estimation using various sources of the ground antenna GPS phase centre correction

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In this study we compared two sources of PCCs of 25 antennas of the same type (LEIAR25.R3 LEIT) mounted at the stations belonging to EUREF Permanent Network. One PCCs came directly from individual calibration prepared by Geo++ GmbH company, second one is the IGS type mean model (igs08_1840.atx). The mean RMS of differences between these two phase centre corrections (dPCCs) is below 1 mm for both GPS frequencies. However, for some antenna models dPCCs exhibit an elevation-dependent or azimuthal asymmetrical patterns, which affect the final estimates. This carries a number of consequences, such as disagreement in position (mostly height) or even changes in values of positions discontinuities (shifts or steps) related to antenna replacements.