

C117241 : MAJOR SURVEY ENGINEERING

KEY WORD: NETWORK / ADJUSTMENT / GPS / CORRELATION

WICHAI KHUNTIPHROMPHOL : GPS NETWORK ADJUSTMENT AND EFFECT OF
CORRELATIONS BETWEEN BASELINES. THESIS ADVISOR :

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The aim of this research is to adjust the GPS network by least squares. The input data of this GPS network adjustment is the baseline vector component which comes from GPS baseline reduction software such as PoPS and TRIMVEC software. The ability of PoPS and TRIMVEC is to compute baseline vector components in each session not more than 10 stations. Hence, the baseline vector components from each session must be readjusted together as a network. However, the different baseline reduction software gives the different format of baseline vector components. Thus, they can not be adjusted together.

This research aims to transform the different format of baseline vector components to be a standard format. Then they can be computed together. Since the GPS network adjustment commercial software omits to take the baseline correlation in the network adjustment. Hence, the effect of the baseline correlation will be the aim of this research as well. From studying, the results of the GPS network adjustment with and without baseline correlation is not significantly different from each other at 5% level.