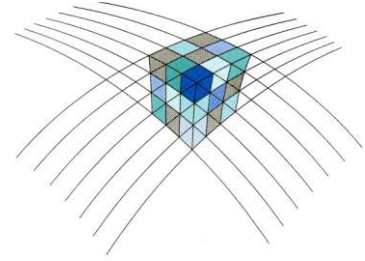


NCG



Netherlands Center for Geodesy and Geo-informatics

Abstract submission for the NCG Symposium 2020

Abstract submission deadline: **24 August 2020**

Please submit your abstract EasyChair

<https://easychair.org/conferences/?conf=ncg2020>

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Presentation title: Analysis of GNSS processing methodologies for subsidence monitoring

Demo: ~~yes~~/no

Abstract (~100 words and optionally 1-2 figures):

In a project for NAM three different GNSS processing methodologies have been investigated: state-space modeling in a local network, regional network processing and Precise Point Positioning. The time series of each have been decomposed into a trend series, annual and semi-annual components, temperature influence, loading, steps and common mode components. The residuals were analyzed to obtain the stochastic model.

After removal of a common mode, the annual, semi-annual, temperature influence and loading components are similar. However, the estimated trend series were slightly different due to the realization of the reference frame by each. After using a procedure to select a suitable subset of (presumably) stable reference stations, the trend series agreed at the millimeter level.

From the study it can be concluded that all three processing methodologies, provided the proper decomposition of the time series and selection of reference stations, can be used for subsidence monitoring. Furthermore, the study provided new insights on GNSS processing methodologies and behavior of GNSS reference stations.