

4. CONCLUSION

Preliminary results regarding 6 hourly and daily coordinates were obtained from 7 years of GPS observations. This process took one and a half year with more than 250 processing. After processing finished data editing is carried out and outlier test used on Matlab software using sigma. Apart from outlier test, several stations excluded from evaluations and further investigations due to lack of long-time observations. These excluded stations include stations effected from earthquakes and changes on the stations antenna and locations. After data editing finished time series plotted and investigated anomalies.

Seasonal behaviors of GPS sites were investigated, strong seasonal and inter-annual signals were found all of the stations. While most stations have close phase values for height component, their amplitudes vary with 3 - 8 mm. After carefully inspection to 6 hourly height components, it is clearly seen that semi-annual signals have too much noise. Therefore, after this point, daily data is used for further investigations. As for spectral analysis, CATS software is used. CATS is a free software package that allows easy and powerful manipulation of time series data in *. cats file format including cycles analysis and various multivariate mathematical techniques. It is suitable for developing economic and other models, for finding cycles in time series and for forecasting. In the Fourier analysis fluctuations observed in the frequency domain. To obtain non-linear trends, seasonal signals (annual and semi-annual) removed from time series. After removal of annual and semi-annual components, a strong inter-annual signal found at all tested stations.

For the future plans, temperature, rainfall data and oscillation data will be compared with the height component time series to investigate the connection between climate change and height time series.

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