

Kalman Filter Analysis of the GPS Coordinates Time Series.

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SUMMARY

The present work deals with the development of tools for analyzing the time series of GPS stations coordinates, based on Kalman filter with kinematic models of deformation. For this purpose, programs were implemented in MATLAB, named: KF_deform3, KF_deform6 and KF_deform9. The application is focused on analysis of a set of coordinates of 04 permanent IGS (International GNSS Service) stations and of a station located at CTS (Centre des Techniques Spatiales, Arzew – Algeria). The results showed that the identity deformation model is the most suitable for time series filtering, among the three implemented models, in terms of estimation accuracy and prediction quality.