



Correlation functions of GPS/DGPS position coordinate measurements

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Signals of a GPS system are of spatial-time nature and they should be modeled as such in algorithms for developing navigational measurements. Consequently, they should be treated as stochastic processes. The authors present results of research into the correlation properties GPS/DGPS signals. A number of series of position coordinates measurements were performed varying in time and space as well as synchronous measurements of two GPS/DGPS receivers. The studies aimed at the identification of the Lat and Long coordinates autocorrelation function and the intercorrelation between the Lat and Long coordinates. It has been found that the measurements are strongly correlated, and the mean correlation time equals a few minutes.