ON THE ESTIMATION OF MEASUREMENTS DISPERSION OF RADIO NAVIGATION PARAMETERS USING DERIVATIVES

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The article presents a general approach to the estimation of dispersion and standard errors of measurements of radio navigation parameters using derived measurements of radio navigation parameters. It is assumed that the measurements are unsolicited and are formed using highly stable reference generators that are part of the transmitting and receiving equipment.

Three methods of estimation of dispersions and standard errors of measurements of radio navigation parameters with the use of derived measurements of radio navigation parameters are considered: a method of obtaining estimates for lag (time) differences (derivatives) of a non-stationary random discrete function; a method of obtaining estimates for ensemble differences of a non-stationary random discrete function; a method of obtaining estimates for a combination of ensemble and lag differences of a non-stationary random discrete function (combined method).

Key words: GLONASS, GPS, frequency standard, radio navigation parameter, pseudorange, pseudophase, slip, dispersion, mean-square error.

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