

Interannual and seasonal variability of atmospheric inhomogeneities from satellite systems data and it's correlation with atmosphere monitoring

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Abstract

© 2016 SPIE. In this paper we presented results long-term experimental study of atmosphere remote sensing by GPS-GLONASS signals and simultaneous near surface atmospheric parameters measurements in Kazan city. During the period of 2010 - 2012. The interannual and seasonal variability of the radio waves zenith tropospheric delay structure functions was analyzed. The correlation coefficient of the of the time structure function decimeter radio waves zenith tropospheric delay power approximation with surface temperature reaches a value of 0.73 for the fluctuations with time scales up to 8 hours. According to the results it can be assume a strong influence of the synoptic processes and the underlying surface on the formation of mesoscale fluctuations in the satellite navigation systems phase path.

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Keywords

GPS remote sensing, Mesoscale processes, Troposphere