

Manifestation of an urban heat island in spatiotemporal fluctuations of the refractive index of electromagnetic waves

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Abstract

© 2015, Pleiades Publishing, Ltd. The problem of the experimental study of decimeter radio wave propagation in the troposphere in urban conditions is considered. The analysis of the structure function of the tropospheric delay of decimeter radio waves during a day by measurements of GLONASS and GPS signals in Kazan is presented. It is found that, for paths over the city, the contribution of the troposphere to the variance of the delay of decimeter radio waves significantly differs from the contribution of out-of-town paths.

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Keywords

atmospheric disturbances, GLONASS, GPS, refraction, urban heat island