

«Perspectives of satellite bistatic remote sensing of the Atmosphere and Earth's surface from space using signals of Global Navigation Satellite Systems for Asian objectives in Remote Sensing»

E.O. Potemkin¹, A.G. Pavelyev²

¹«VNIIEM Corporation» JSC
107078, Moscow, Khoromny tupik 4, knyazzz@list.ru

²Kotelnikov «FIRE RAS»
141190, Moscow region, Fryazino, Vvedenskogo sq. 1, pvlv@ms.ire.rssi.ru

Analysis of the sensitivity of the phase and Doppler frequency of radio waves to variations of the reflective properties, effects of refraction and absorption, and to average Earth's surface height is provided for bistatic radar measurements from space under small grazing angles. The results are supported by experimental data obtained during radio occultation experiments by use of the communication link orbital station "MIR" – geostationary satellites.

Keywords: bistatic radio location Earth's surface, refraction, absorption, radio waves, phase, Doppler frequency.