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Ionosphere modeling in Antarctic region using the dual-frequency phase GNSS-data

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The Ukrainian Antarctic Vernadsky station GNSS data are used for the study of electron content variations in the ionosphere. Main purpose of this work consists in the registration of ionosphere response to strong tropospheric disturbances in the Drake Passage region. The method of selection of variations in atmospheric gravity wave spectral band is developed. Special efforts were directed for the elimination of multiple-beam effects at satellite's signal detection. The original method for computing of unambiguous Total Electron Content and ionosphere delays using only carrier phase data was added. The regional quasi-periodic variations of electron content were revealed at the treatment of available data. They can be interpreted as the effect of atmospheric gravity waves. Future work is carried out relative to the search of reliable correspondence between the revealed variations, troposphere parameter changes and geomagnetic field variations.