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Ionospheric quasi-static electric fields anomalies during seismic activity in August-November 1981

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The paper presents new results on the processing of INTERCOSMOS-BULGARIA-1300 satellite data of the quasi-static electric field in the upper ionosphere over earthquakes' source regions at different latitudes The earthquake data were obtained from United State Geological Survey (USGS) website. The ionospheric quasi-static electric field data recorded by IESP-1 instrument aboard the INTERCOSMOS-BULGARIA-1300 satellite are used for the period from August 1981 to November 1981. The main goal of the above research work is to generalize our results of possible connection between anomalous vertical electric fields penetrating from the earthquake zone into the ionosphere, and seismic activity.The methodology of the above work is divided into three blocks-(i) satellite and seismic data selection, (ii) data processing and observations of the quasi-static electric field, (iii) comparison of observational new data with the results in our previous studies. We show new results from observations of the quasi-static electric field on board INTERCOSMOS-BULGARIA-1300 satellite in the polar, middle, low and near-equatorial latitude ionosphere. The obtained results strengthen our previous studies (Gousheva et al., 2005a, b; 2006a, b; 2007a, b). After review of observational results we analyze an increase of about 5-10-15 mV/m in the vertical component of the quasi-static electric field observed by INTERCOSMOS-BULGARIA-1300 in the upper ionosphere above earthquakes sources during seismic activity. The paper discusses the observed effects. An attempt of a statistical stady of ionospheric effects 5 days before and 3 days after the earthquakes with M $\geq$ 4.8 is presented.