

## Accepted Manuscript

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PII: S0273-1177(17)30576-8  
DOI: <http://dx.doi.org/10.1016/j.asr.2017.08.001>  
Reference: JASR 13357

To appear in: *Advances in Space Research*

Received Date: 19 April 2017  
Revised Date: 20 July 2017  
Accepted Date: 2 August 2017

Please cite this article as: Shuvalov, V.A., Lazuchenkov, D.N., Gorev, N.B., Kochubei, G.S., Identification of seismic activity sources on the subsatellite track by ionospheric plasma disturbances detected with the Sich-2 onboard probes, *Advances in Space Research* (2017), doi: <http://dx.doi.org/10.1016/j.asr.2017.08.001>

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## Identification of seismic activity sources on the subsatellite track by ionospheric plasma disturbances detected with the Sich-2 onboard probes

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### Abstract

Using a cylindrical Langmuir probe and the authors' proprietary two-channel pressure transducer, ionospheric plasma parameter distributions along the orbit of the Sich-2 satellite (Ukraine, 2011–2012) were measured. This paper is concerned with identifying the space-time location of ionospheric plasma disturbance sources, including the epicenters of actual earthquakes (before or during the satellite flyover) and incipient earthquakes on the subsatellite track, from the measured distributions of the electron density and temperature and the neutral particle temperature along the satellite orbit. To do this, the measured ionospheric plasma parameter distributions are connected to the coordinates on the subsatellite track.

It is shown that local disturbances in the electron density and temperature and neutral particle temperature distributions in the satellite orbit in the ionosphere may serve as indicators of seismic activity on the subsatellite track. The epicenters of incipient earthquakes may be set off from other plasma parameter disturbance sources associated with seismic activity using information provided by special monitoring and survey centers that monitor the current seismic situation.

*Keywords:* Earthquake; Identification; Ionospheric plasma disturbance; Probe system; Satellite; Subsatellite track

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