Geosistemy perehodnykh zon = Geosystems of Transition Zones / Геосистемы переходных зон

2024, vol. 8, no. 2, pp. 91–103

URL: http://journal.imgg.ru/archive.htm ; https://elibrary.ru/title_about.asp?id=64191

https://doi.org/10.30730/gtrz.2024.8.2.091-103 ; https://www.elibrary.ru/idofpc ; http://journal.imgg.ru/web/full/f-e2024-2-2.pdf

The manifestations of geomagnetic activity (solar flares and magnetic storms) in the change of electrotelluric potentials according to measurements at the Yuzhno-Sakhalinsk geophysical test site

Zakupin, Alexander S., https://orcid.org/0000-0003-0593-6417, a.zakupin@imgg.ru

Stovbun, Nikolai S., https://orcid.org/0009-0004-1927-798X, nikolay19972016@gmail.com

Gulyakov, Sergei A., https://orcid.org/0009-0001-7924-6972, gulyakov_97@mail.ru

Kazakov, Artem I., https://orcid.org/0000-0002-1378-185X, legn@inbox.ru

Dudchenko, Ilya P., https://orcid.org/0000-0002-4967-7405, ilpadu@mail.ru

Institute of Marine Geology and Geophysics of the Far Eastern Branch of RAS, Yuzhno-Sakhalinsk, Russia

Abstract PDF ENG PDF RUS Full text PDF ENG PDF RUS

Abstract. The results of the analysis of changes in electrotelluric potentials (ETP) during the observation of intense solar flare events and intense magnetic storms on Sakhalin are presented. The data were studied in the period from July 20 to October 12, 2023. The absence of characteristic changes in the ETP (integral amplification or attenuation of noise in the low-frequency region) depending on the presence or absence of a solar flare event is shown. At the same time, in some cases, the strongest flashes were found to coincide with the appearance of signals of the GUV type (Geyser type ULF Variation). For almost three months of observations, five cases of quasi-periodic GUV series have been identified, four of which coincide completely or partially with the times of solar flares and magnetic storms. It should be noted that earlier in the literature, the appearance of these signals was not correlated with any physical process. At the same time, the identification of such patterns is an integral part of extensive work on identifying predictive signs of earthquake preparation in the ETP.

Keywords:

a series of electrical signals, solar flare, telluric potentials, magnetic storm, GUV

For citation: Zakupin A.S, Stovbun N.S., Gulyakov S.A., Kazakov A.I., Dudchenko I.P. The manifestations of geomagnetic activity (solar flares and magnetic storms) in the change of electrotelluric potentials according to measurements at the Yuzhno-Sakhalinsk geophysical test site [Electronic source]. *Geosistemy perehodnykh zon = Geosystems of Transition Zones*, 2024, vol. 8, no. 2, pp. 91–103. (In Russ. & in Engl.). URL: http://journal.imgg.ru/web/full/f-e2024-2-2.pdf; https://doi.org/10.30730/gtrz.2024.8.2.091-103

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