

DECODING OF FAULTS IN THE SOUTHWESTERN PART OF SAKHALIN ISLAND

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Sakhalin faults, as a rule, are accompanied by high seismicity, which must be taken into account when deciphering this territory. Certain factors accompanying earthquakes provide decoding features that allow more accurately determining the lineaments accompanying faults. With the help of automatic lineament analysis, it is not difficult to identify fault zones using mathematical algorithms used in computer vision. The purpose of the study is to show the dependence of the fault zones location and earthquake epicenters by analyzing a series of modified images of satellite surveys and geophysical data. The technology of fault decoding includes the following methods: 1) methods of preliminary processing of images that ensure operation on the ArcGIS platform; 2) methods for determining lineaments that allow processing a series of images in the PyLEFA program; 3) methods for designing maps by analyzing the obtained lineaments and geophysical data of the studied territory on the QGIS platform. Results. This article examines the territory of the southwestern part of Sakhalin Island based on images obtained using the Landsat-8 satellite and SRTM data. The analysis of disjunctive disorders was carried out using the software products PyLEFA, QGIS and ArcGIS. As a result of the conducted studies, a dependence was revealed showing an increase in the number of earthquakes near the faults of the Earth's crust.

Keywords: remote sensing of the Earth, decoding, lineament analysis, geographic information thematic mapping, geodynamic activity, PyLEFA, SRTM, Landsat

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