

Investigations of the Geomorphodynamics of the Orogenic Areas in Northeastern Russia

SMIRNOV V.N., GALANIN A.A. North-East Interdisciplinary Research Institute Far East Branch of the Russia Academy of Sciences, Magadan, Russia

New data on endogenic and exogenic dynamics of various orogenesis regions in northeastern Russia were obtained. Active seismogenic faults, and tectonic and gravitational paleoseismic dislocations were distinguished. Dynamics of modern slope processes of mass displacement (landslides, rock falls, block streams etc.) were examined. Their relationships to modern endogenic geodynamics and climatic factors were established.

Biological methods, including lichenometry one, were used with traditional geochronological methods. A new variant of lichenometric dating developed by us was elaborated. This variant made it possible to estimate the age and velocity of objects within the interval of 4-6 Ka in Arcto-Alpine regions, and of 1-1,5 Ka in central mountain region of northeastern Russia. As temporal indicators of exposure, species from *Rhizocarpon*, *Aspicilia* and *Haematomma* genera were used.

Lichenometric dating of the exposed surfaces of the active faults in the Koryak Highland made it possible to estimate the velocity of tectonic block elevation at 4-5 mm per year.

The estimation of the velocity of surface displacements of overlap moraine and rock glacier in the Iskatén and Koryak Ranges was given. This estimation is from 0,21 to 1,27 m per year for the last 100 years. The age of these occurrences (the time of complete mass exchange) is estimated as 2-3 Ka. The age of block streams in Primagadanye is 500-1000 years.