

**Comparative analysis of environmental changes in Arctic and Antarctic through the Late Pleistocene and the Holocene (climate, glaciation, permafrost, fluctuations of the Ocean level, landscapes)**

**Leader: A.A. Velichko. (Institute of Geography, Russian Academy of Sciences).**

**Contact: [paleo@online.ru](mailto:paleo@online.ru)**

**The aim of investigations**

The proposed project is aimed at multidisciplinary comparative analysis of landscapes and climate evolution in both polar regions of the Earth, with a specific objective to clarify the mechanism of interaction between the principal environmental components in high latitudes of the Earth.

**Short background**

The interval to be covered by the investigations spans the last 140 thousand years (that is, the Late Pleistocene and the Holocene). The interval includes the complete climatic interglacial-glacial cycle, one of the those cycles which have determined the terrestrial evolution through the last million years; it would permit to elucidate patterns of environmental transformation in polar regions and an impact of natural events in those regions on the global climate and environments of the Earth as a whole. Besides, the proposed interval includes the beginning of a new cycle – the Holocene (the current interglacial) thus providing a possibility to trace the natural trends in the further development of the global climate and environments.

**Planned results.**

A thorough analysis of comprehensive data on the climate changes in Arctic and Antarctic within the late Pleistocene and Holocene, together with those on the ocean's transgressions and regressions, would give an insight into synchronicity or asynchronicity in evolution of the natural components in the polar region of the Earth as compared with those of temperate and tropical latitudes.

**Principal methods of investigations:**

geomorphological, chronostratigraphic, lithological, isotope geochemistry, paleo-glaciological, paleocryological, paleobotanic, paleo-oceanology; spatial reconstructions of paleoclimates and modelling.

**Time, location and resources of field studies**

2007-2008 – field studies (high latitudes of Eurasia and North America; coastal regions of Antarctic), laboratory analyses, data processing

2009 – preparation of general report

The work would be supported by national and international foundations.