

Digital Glaciological Atlas “Snow and Ice on the Earth”

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In the paper we perform the World Digital Glaciological Atlas “Snow and Ice on the Earth”. This atlas based on the World Atlas of Snow and Ice Resources published in Russia in the very last years of the past century.

In this Atlas the knowledge of snow –ice processes and phenomena of the whole globe was summed up in cartographic form based on common method. Maps presented in the Atlas demonstrate snow and ice state on the Earth in the 1960-70s and can serve a starting point for analysis of the subsequent changes taking place on the Earth.

In the Atlas there are cartographic models of nival-glacial of all levels, they were compiled on the basis of average for many years direct and indirect data according to observations over nival-glacial environment during 30 years. In the Atlas certain glaciological information and glaciological knowledge accumulated by the world glaciology during previous years is accumulated.

The digital Atlas based on GIS techniques and can serve as the basis of glaciological monitoring and organization of broad regional studies. Package of ARC programs by ESRI is used for Atlas creation. ARC/Info makes it possible to keep cartographic information in the form of thematic layers of multi-layer database and to fulfill different arithmetic and logical operations with these layers. We present some examples at three scale levels: global (continental), regional (in the framework of mountain regions), and local (for individual glaciers). The goal of this Atlas is systematization of the data available, creation of tools for a digital cartographic analysis as well as its use for general educational purposes.

The project is carried out in the Institute of geography of the Russian Academy of Sciences. The maps from the Atlas will be available via Internet.