



Geodynamic processes in Antarctic as a course of global changes of movable spheres of Earth

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The Antarctic region represents one of the key parts in system of global dynamic processes of a planet, as in the geodynamic and atmospheric-circulating relation. At spherical fluctuations the Earth variably swell on equator and near poles. Last type of movement is typical for annual scale of geodeformations. Geodynamic methods reveal « New global annual mode of geodeformation » (Science 2001.№5530) which shows, that Northern hemisphere in February - March is compressed, and Southern - is stretched, and in August - September on the contrary. The given mode forms in February - March effect of lowering of a surface geoid, in Southern a hemisphere on 3 mm, and equatorial displacement in northern direction on 1,5 mm that corresponds an exchange of weights between hemispheres $1 \pm 0,2 \cdot 10^{16} \text{kg}$ and causes additional deformation of the Earth. Tension of the Southern hemisphere in February - March causes activation of the basic planetary breaks around Antarctica and on meridional to a direction from continent up to the Californian peninsula, Red sea, Azores. We assume, that the change of weights allocation between hemispheres results in change of gravitational potential between them, and it in turn results in change of atmospheric weights allocation.

In an atmospheric and circulating mode of the Earth, in February - March and August - September there is an opposite change of dynamic processes. The maximal displacement of subtropical zones of a high pressure of both hemispheres and ITCZ in a southern direction, in February - March, and in northern - August - September. In these periods extremest center of atmospheric action are changed also. In the Antarctic region near a surface of the ground in January are observed the greatest low baric gradients, in July - August, it is displayed in an annual course of speed of the wind. In middle troposphere circulation cyclone has the minimal diameter in February and starts growing in March, and in July - August - maximal and in September starts will decrease, that specifies a direction of dynamics and intensity of atmospheric processes in region. At activation of planetary fracture in meridional direction on their northern terminations there are non-standard circuits of atmospheric circulation, for example: exit and stationary cyclones on subtropical latitudes, in northern Atlantic and northern Pacific ocean.

Thus, the Antarctic region is an important indicator of dynamic processes on the Earth, observing of which we can make the conclusions about geodynamic and atmospheric-circulating process.