

The influence of solar activity and cosmic rays on precipitation budget in different regions of the planet.

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The statistical connections between annual cosmic rays intensity, annual solar activity (Wolf numbers) and annual precipitation budget are analysed in different regions of the planet. There were used about 200 meteorological time series and 15 most complete neutron monitor time series located in different areas of the World.

The existence of close negative correlation connection between solar activity and cosmic rays intensity causes an additional substantiation of the real reason (first or second factor) of an influence on weather or climatic parameters.

The correlation connections between annual solar activity and precipitation budget, as a rule, are weak. However rather close correlation between 7-year average precipitation budget and solar activity was found out (correlation coefficients: $\pm 0,6 - 0,8$). It allows supposing the existence of some complicated physical mechanism performing influence of solar activity on average precipitation budget.

The analysis has also shown that there are weak correlation connections (with both signs) between annual cosmic rays intensity and annual precipitation budget. This connection, generally, is a little bit more considerable than between annual solar activity and annual precipitation budget.

The different signs of correlation connections between cosmic rays intensity and precipitation budget puts under doubt a hypothesis about cosmic rays impact on a processes of generation and evolution of rain clouds.

At the same time, rather good spatial localization of correlation coefficients (between cosmic rays intensity and precipitation budget) with equal signs was found out. It allows assuming an influence of cosmic rays on circulation processes in atmosphere. The result of such influence can consist in strengthening of anticyclone activity, which, in this case, should lead to:

- decrease of precipitation quantity (negative correlation coefficients) in zones contiguous with the central areas of climatological fields of high pressure;
- rise of precipitation quantity (positive correlation coefficients) in those regions

where there is no predominance of anticyclone circulation form and where the processes of blocking up of cyclone moving take place;

- rise of precipitation quantity (positive correlation coefficients) connected with increasing of convective processes inside of tropical zones of convergence.

As a result of the analysis of spatial localization of correlation coefficients between cosmic rays intensity and precipitation budget the zones of negative and positive meanings were found out in Europe, Asia, Northern America (Northern hemisphere), and also in a Southern hemisphere, and, in particular, in territory of Brazil.

The found out global spatial localization of correlation coefficients as a whole does not contradict the put forward above hypothesis, however this idea requires the additional analysis and confirmation.