



## **Influence of space weather on atmospheric electricity and water cycle**

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The influence of solar activity on the global water cycle is subject of our investigation. The first object of the study is the global electric circuit which is influenced both on space weather and meteorological factors. Analysis of the measurement data of the potential gradient and the conduction current density showed a close relationship with solar activity. The second object of our study is to determine the physical mechanism of the influence of the atmospheric electricity on the water cycle. In laboratory experiments, we observed a dependence of the water evaporation rate on the electric potential gradient.

So, we can assume that solar activity influences on atmospheric processes by changing the parameters of the global atmospheric electrical circuit and the water cycle. Indeed, the analysis of satellite data showed the dependence of precipitable water vapor and low-middle level cloudiness on the galactic cosmic rays flux. Our numerical model allows us to study the impact of space weather on the elements of the global electric current circuit, the hydrological cycle and climate change.