

## **Study on Correlation Between Cosmic Rays Intensity and Atmosphere Humidity at Near Earth Surface**

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**Abstract:** Experimental studies of estimation the mutual influence of humidity and flux of cosmic rays in first approximation were carried out. Normalized cross-correlation function of time series of neutron monitors count rate and level of relative atmosphere humidity near cosmic rays registration point is studied. Corrected and uncorrected on pressure minute and hour data of 6NM64 neutron monitor count rate were used for the study. Neutron monitor is located in Al-Farabi Kazakh National University, at an altitude of 850 m above sea level. Also, data from NM64 neutron monitor of Tien Shan mountain research station of Institute of Ionosphere, located at an altitude of 3340 m above sea level were used. Uncorrected on pressure cosmic rays intensity better reflects the changes in relative atmosphere humidity. Average and sometimes strong relationship is often observed by time changes of atmosphere humidity near the point of cosmic rays detection and their intensity: the value of normalized cross-correlation function of respective signals, even in case of their long duration and a large number of data (eg, for minute changes at intervals of up to several months) covers 0.5 - 0.75 range, sometimes falling to ~ 0.4.

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**Keywords:** cosmic rays, atmosphere, correlation, neutron monitor, intensity

**Classification:**

Experimental data processing