

## **Experimental investigations and modeling of the thin spatial structure of meteor showers**

Karpov A., Gainullin R.

*Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia*

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### **Abstract**

Characteristics of the thin spatial structure of the Geminid showers obtained by using the data of radar measurements are presented in this paper. Observations were conducted on the radar (Kazan, Russia) from 1985 to 2002 on the frequency 32,8 MHz. The identification of groupings occurs with the use of the statistical  $\gamma(\Delta T)$  criterion. Experimental results were processed for the two registration levels. The following was observed when groupings were revealed: 69% - groupings on the low level only, 13% - groupings on the high level only. We can consider that the presence of the thin structure (groupings) is experimentally proven. These results enable us to explain why results obtained by other scholars are so contradictory. It all depends on the power potential of a radar. High-energy radars or those using compound antenna systems registered, as a rule, the deviation of the registration flow characteristics from the Poisson flow properties. And vice versa, normally the low-sensitivity equipment detects the Poisson registration flow. This work is also devoted to issues of identifying parameters of longitudinal particle groupings in the shower. the poisson-poisson model of groupings was implemented, the following basic parameters of the model were identified: the medium length of groupings and the intensity relation of the structured and non-structured flows.

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