

DESTRUCTION OF METEOROIDS AND FALL OF METEORITES

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Now, observations of meteors and fireballs in atmosphere of the Earth and other planets serve as unique way for studying of natural space bodies of the average sizes ($1 - 10^5$ cm). Therefore it is necessary to develop correct methods for interpretation of these observations.

In the world literature there are serious contradictions in estimations of meteoroids properties and, first of all, their initial masses. There are two basic approaches: an estimation of masses on meteor luminosity (the photometric formula) and on its braking in atmosphere. Results considerably disperse.

For an explanation of this divergence there are two hypotheses: low density of a meteoric body and destruction of a meteoroid on fragments. In the report both hypotheses are discussed.

According to authors of the report, the essence of divergences consists in wrongful use of the photometric formula for interpretation of observations concerning large meteoroids.

The hypothesis about a destruction role is considered within the limits of the classical mechanics for high-speed movement of bodies in the atmosphere. On the basis of results of numerical experiments on gas dynamics of bodies systems, it is shown that the configuration of a cloud of fragments, necessary for a hypothesis of destruction, practically is not realized.

Actually destruction of a meteoric body occurs in the bottom part of a shone site of a trajectory. Therefore the hypothesis about a destruction role cannot explain regular excess of photometric mass in comparison with the mass defined on observable braking.