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# Ablation of meteoroids.

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The ablation of meteoroids essentially influences on all processes connected with or initiated by meteoroid entry. Evaporated meteor substance interacts with incoming air flow and forms disturbed area both around and behind the meteor body.

Ablation is dependent on size/mass, velocity, altitude of flight and meteoroid properties. Material from ablation of small-sized meteors (roughly R<=0.01-1 cm) is mostly deposited between 120-80 km altitudes. Larger bodies (up to meter sizes) penetrate deeper into the atmosphere (down to 20 km altitude). Meteoroids of cometary origin typically have higher termination altitude due to substance properties and higher entry velocity. Fast meteoroids (V>30-40 km/s) may lost a part of their material at higher altitudes due to sputtering.

Local flow regime realized around the falling body determines the heat transfer and ablation. At high altitudes the meteoroid interaction with the atmosphere may be considered in the frame of free molecule regime, which assumes no collisions between evaporated meteoroid particles. These evaporated particles form initial train, which then spreads into an ambient air due to diffusion. With altitude decreasing the meteoroid surface screening by vapor should be taken into account. If the altitude decreases further and the meteoroid still have enough mass and velocity, the shock wave is formed around the body and prevents the direct interaction of air molecules with meteoroid surface. The interaction should be considered in the continuous flow regime. The boundaries between these three regimes are size/velocity dependent.

This presentation will discuss regimes' boundaries and ablation features in different regimes.