

Inertia or where does a parcel falling out of an aircraft reach the ground?

with drag

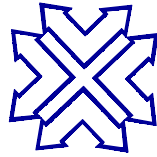


Attention: To see the animation, you need a player of macromedia (Flash5)

Author:: BIGS 2002 (C. Bluck, J. Gans, A. Gleixner; Prof. W. Heimbrodt; S. Stallmann, M Totzeck)

Explanation

When it is in the aircraft, the parcel moves at precisely the same speed as the aircraft. As the parcel is thrown out of the aircraft, its horizontal speed will be reduced or the time required to reach the ground will be extended by drag acting on the parcel. In comparison with the situation without drag, the parcel describes a squeezed parabolic path and reaches the ground behind the aircraft. The distance between the point of impact and the aircraft depends on wind conditions.



without drag



Explanation

When it is in the aircraft, the parcel moves at precisely the same speed as the aircraft. In accordance with the law of inertia, the parcel retains this horizontal speed as it is thrown out of the aircraft, if drag is neglected. As the parcel is also subject to gravity, it describes a parabolic path ending precisely under the aircraft as it continues its flight.