

## **A study on the cloud effect on debris trajectory**

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In this paper, the cloud effect on debris trajectory is investigated. The cloud effect discussed here refers to the reduction of on the drag coefficients of debris at the initial stage of the trajectory after an internal explosion, when the concrete magazine is just disintegrated into concrete debris packed closely with each other. The numerical results obtained with and without considering the cloud effect from the trajectory tracing tool DeThrow are used to study the influence on the debris first landing position and kinetic energy. In addition, several different ways to simulate the influence of cloud effect are also discussed.

**Keywords:** debris trajectory, Cloud effect, drag coefficient, DeThrow