

## عنوان مقاله:

۲D Planar Simulation of Collisions between Liquid Droplets and Solid Particles in a Gas

## محل انتشار:

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## خلاصه مقاله:

Here we present a ۲D planar simulation of the collisions between liquid droplets and solid particles that are most often used in industrial applications. The collisions are modeled using a combination of Volume of Fluid and Level Set methods. We study the impact of the particle-to-droplet size ratio and the shape of solid particles on the collision behavior and interaction regimes. The findings are presented in the form of collision regime maps. The interaction regimes are also distinguished for binary droplet collisions: deposition, separation, and disintegration. We show the impact of density, viscosity, and surface tension on the droplet collision regime maps as well as on the number of secondary fragments. The practical value of the research comes from the newly established differences of collision regimes between droplets and particles of different shapes and sizes.

## کلمات کلیدی:

Droplet and particle collisions, interaction regimes, volume of fluid method, Level Set Method, different shapes, ۲D planar simulation

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