

Abstract Submitted
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Nonspherical liquid droplet falling in air KIRTI SAHU, Indian Institute of Technology Hyderabad, india, MEENU AGRAWAL, Indian Institute of Tech Hyderabad, PREMLALA A. R, Indian Institute of Technology Hyderabad, india, MANOJ TRIPATHI, Indian Institute of Science Education and Research Bhopal, BADARINATH KARRI, Indian Institute of Technology Hyderabad, india, KIRTI SAHU COLLABORATION — The dynamics of an initially nonspherical liquid droplet falling in air under the action of gravity is investigated via three-dimensional numerical simulations of the Navier-Stokes and continuity equations in the inertial regime. The surface tension is considered to be high enough so that a droplet does not undergo break-up. Vertically symmetric oscillations which decay with time are observed for low inertia. The amplitude of these oscillations increases for high Gallilei numbers and the shape asymmetry in the vertical direction becomes prominent. The reason for this asymmetry has been attributed to the higher aerodynamic inertia. Moreover, even for large inertia, no path deviations/oscillations are observed.

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