ADAPTIVE SIMULATIONS OF DROP/INTERFACE IMPACT JOHN LOWENGRUB

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We simulate the impact of a deformable droplet upon an initially flat interface. The computational algorithm relies on the use of the level-set method to represent the interfaces together with an adaptive unstructured volume mesh that makes it possible to accurately the wide range of length scales characterizing the dynamics. The impact is studied as a function of the Reynolds Weber, and Bond numbers. Regimes are determined for which the drops rebound off the initially flat interface before coalescence. The results are in excellent agreement with recent experiments by Mohamed-Kassim and Longmire.

References

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