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Lattice Boltzmann Simulations of Drop Impingement on Walls SHILADITYA MUKHERJEE, JOHN ABRAHAM, School of Mechanical Engineering, Purdue University — The lattice Boltzmann method (LBM) (Chen and Doolen, 1998; Succi 2001) [1, 2] is employed to simulate drop impingement. The Weber number range considered is 1 to 200 and Ohnesorge number range is 0.01 to 0.001. Different stages of evolution of the impinged drop, namely, spreading, recoil and oscillation are reproduced. A model is proposed and applied to simulate wettability. The prediction of the transient evolution of the impinged drop and wettability effects are the new contributions of this work.

## References

Chen, S. and Doolen, G.D., Ann. Rev. Fluid Mech. 30: 329-364 (1998).
Succi, S. The Lattice Boltzmann Equation for Fluid Dynamics and Beyond, Oxford University Press, 2001.

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