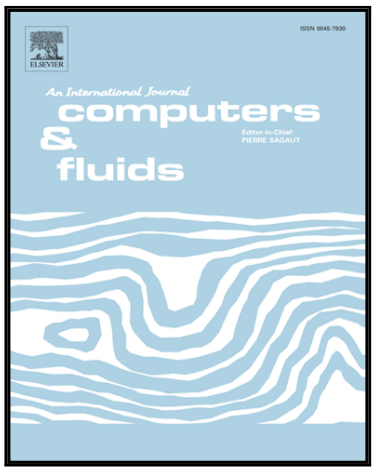

Numerical simulation of head-on collision dynamics of binary droplets with various diameter ratios by the two-phase lattice kinetic scheme

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Highlights

- Binary droplet collisions for various diameter ratios (Δ) are simulated.
- The critical Weber number (We_c) between coalescence and separation is investigated.
- Wec reaches its minimum at $\Delta = 0.7$.
- Relation between We_c and Δ is independent of the Reynolds number (Re) for Re>2000.
- Energy plays a vital role in after-collision patterns as well as We_c.