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Fully Resolved Simulations of Complex Multiphase Flows

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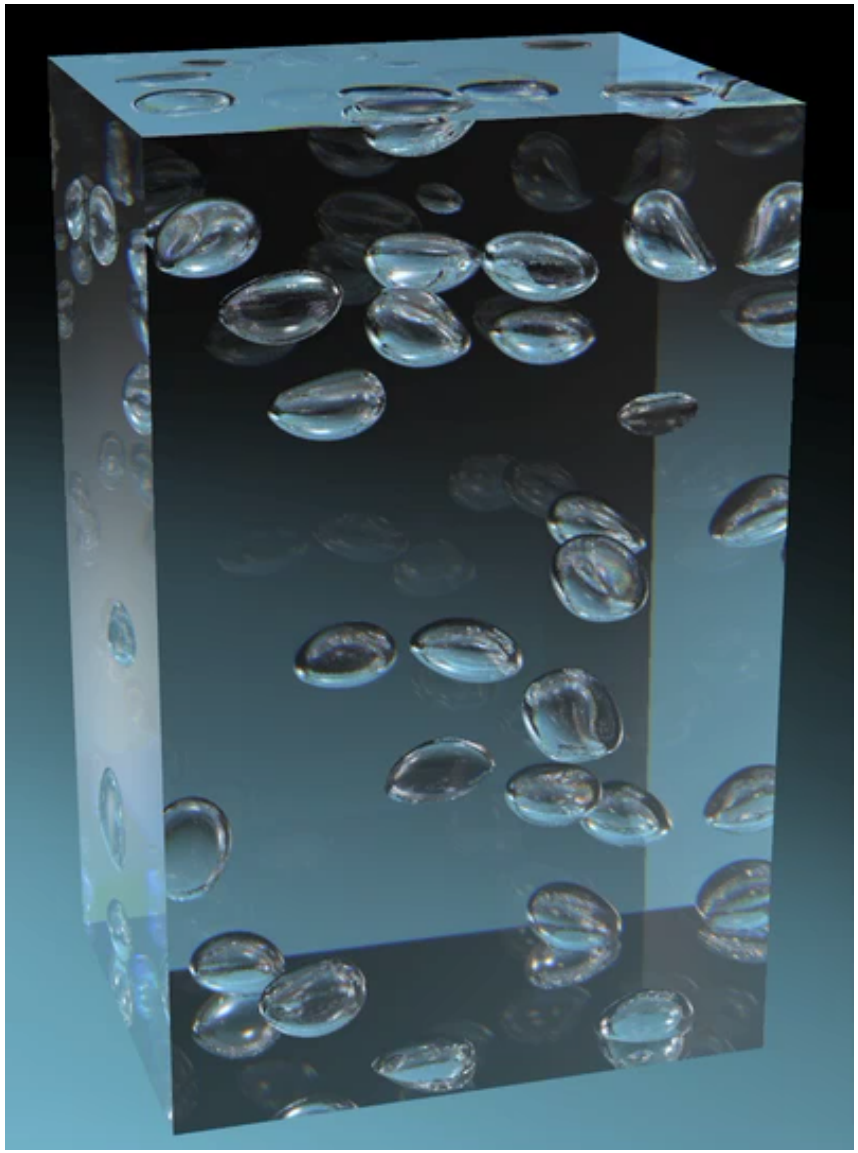

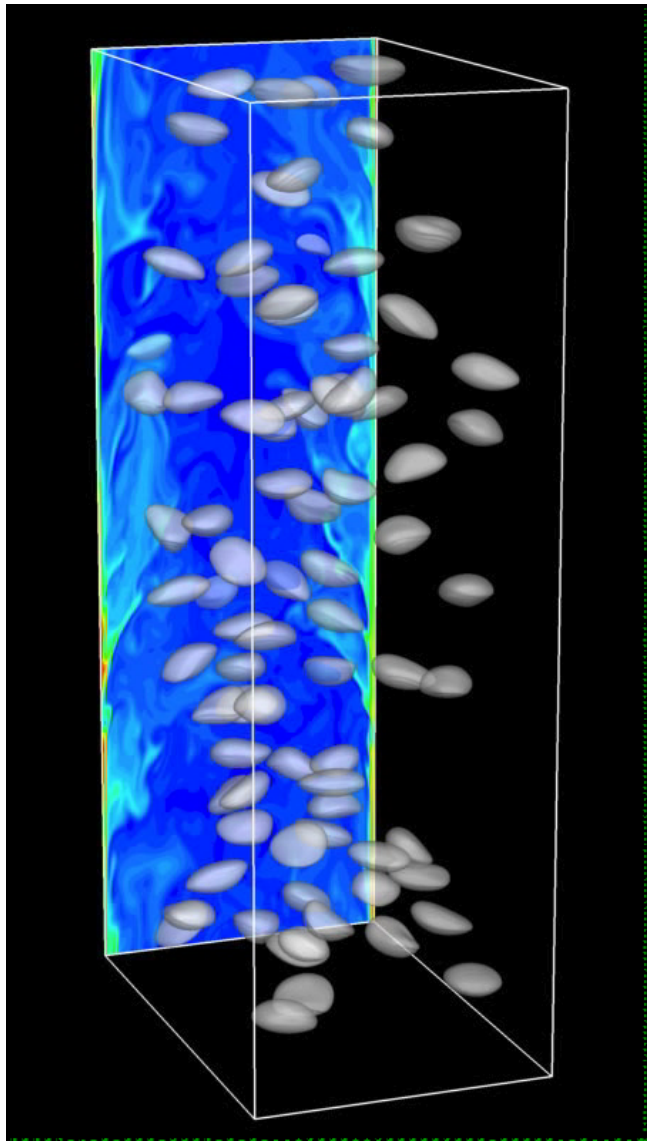

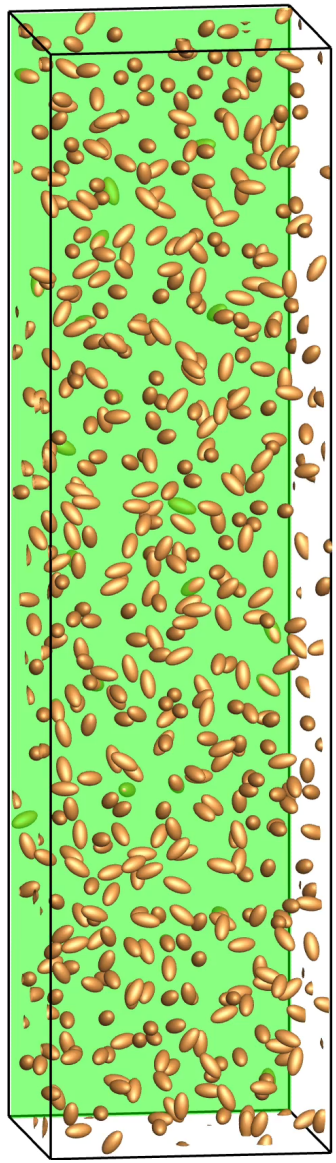

We have come a long way and simulations of disperse multiphase flows are now relatively routine

Where We Are

While continuing refinement of the methods, making them more accurate and more robust are important pursuits,
the progress made so far is opening up new possibilities.

Two important questions are:

- How do we use the abundance of information that is already available most effectively to generate models for closure terms in RANS and LES computations of industrial systems?

- How do we extend current capabilities to more complex multi-phase, multi-physics and multi-scale systems in the most effective way?

Froth Flotation—Single Bubble

Outline

- Numerical Approach
- Three Phase Flows
- Coarsening and Modeling

Numerical Approach