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Deformation and migration of finite-sized bubbles in turbulent channel flows YINGHE QI, RUI NI, Johns Hopkins University — Through extensive efforts in measuring bubble dynamics in turbulence, we have developed two important models for bubbles, one for its center of mass motion and the other one for its deformation. In this talk, I will present a new effort to implement these two models together along with a background turbulent channel flows by using the JHU turbulence database. In particular, because the carrier phase is pre-calculated, the simulation can be repeated for many bubbles of different sizes and surface tension. The results will be compared with well-established data in bubble columns to understand how turbulence-bubble interaction at different flow rates modulates the bubble concentration at different radial locations.

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