

Abstract Submitted
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Wall drag modification by large droplets in turbulent channel flow LUCA SCARBOLO, ALFREDO SOLDATI, University of Udine — Object of this work is to examine the influence of large deformable droplets on wall-bounded turbulence. To this aim we study the behavior of a swarm of droplets with the same density and viscosity of the surrounding fluid in turbulent channel flow. We use direct numerical simulations of turbulence coupled with a phase field model for the interface tracking. A wide range of Weber numbers (ratio between inertia and surface tension) is explored for shear Reynolds number $Re_\tau = 150$. To quantify surface tension effects on the flow the wall shear stress, the average droplet deformability and the turbulent kinetic energy budgets will be analyzed.

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