Read the paper "Direct Numerical Simulations of bubble-laden turbulent flows using the two-fluid formulation" by Druzhinin and Elghobashi, Physics of Fluids, 1998, Vol 10, Number 3, pp 685-697

The paper describes the simulation of bubbly turbulent flows (a Taylor-Green Vortex and slowly decaying homogeneous isotropic turbulence) where a large number of bubbles interact with a carrier liquid flow that is turbulent.

- Describe the bubble field (size, density, velocity, spatial distribution, etc.) as it is initially "placed" into the flow and how it evolves (qualitatively how it changes).

- Explain what determines the slip velocity between the phases in this flow

- Characterize how the interfacial force term is formulated and how it is computed to be applied to the simulation.

- Enumerate the non-dimensional parameters used in the set-up of the problem, as well as in the analysis, and try to describe their physical significance.