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**TURBULENCE IN TWO-PHASE FLOWS OF VISCOUS
INCOMPRESSIBLE FLUIDS**

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We consider a model for the study of the evolution of an incompressible mixture of two fluid flows in a two-dimensional bounded domain. This model consists of system of two PDE's, namely, the incompressible Navier-Stokes equation coupled with a convective Cahn-Hilliard equation endowed with suitable boundary conditions. Such systems can be viewed as generalizations of the classical Navier-Stokes equations to binary fluid flows. We analyze the asymptotic behavior of the solutions, i.e, via finite dimensional attractors, convergence of trajectories to single equilibria, etc.

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