Desjardins, Benoît

Regularity results for two-dimensional flows of multiphase viscous fluids. (English)

Zbl 0880.76090
Arch. Ration. Mech. Anal. 137, No. 2, 135-158 (1997).

Summary: Global regularity results for weak solutions of the Navier-Stokes equations for two-dimensional multiphase incompressible fluids are proved under suitable conditions on the viscosity without assuming positive lower bounds on the initial density. As an application, we deduce regularity properties for the integral curves of the corresponding velocity field. Finally, we prove regularity results "in the small" for strong solutions.

MSC:

76T99	Multiphase and multicomponent flows	Cited in **1** Review
76N10	Existence, uniqueness, and regularity theory for compressible fluids and gas dynamics	Cited in **56** Documents
35Q35	PDEs in connection with fluid mechanics	
35B65	Smoothness and regularity of solutions to PDEs	

Keywords:

weak solutions; Navier-Stokes equations; integral curves; strong solutions

Full Text: DOI