عنوان مقاله:

Numerical Simulation of Drop Deformation under Simple Shear Flow of Non-Newtonian Fluids by a Consistent WC-SPH

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خلاصه مقاله:

In this paper, deformation of a single 2D-planar droplet under simple shear flow of a viscoelastic fluid obeying the Oldroyd-B rheological model is numerically investigated using a modified consistent version of weakly compressible smoothed particle hydrodynamics (WC-SPH) method. Firstly, the developed algorithm is verified against Newtonian and Oldroyd-B previous published results. Secondly, the effect of different model parameters including relaxation time and polymeric content is investigated as well as Reynolds and Capillary numbers. It is shown that the rheological .behavior of the surrounding fluid could dramatically affect the droplet deformation

کلمات کلیدی:

two-phase flow, drop deformation, viscoelastic fluids, numerical simulation, WC-SPH