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Tom Hou and **Congming Li***, Applied Math, Univ. of Colorado, Boulder, CO 80309. *Global Well-Posedness of Some PDEs of Fluid Type.*

Here, we present some recent global existence results about the 'level set' approximation of NS and the Lagrangian averaged 3-D Euler Equation. The global existence of the Lagrangian averaged 2D Boussinesq equations and the Lagrangian averaged 2D quasi-geostrophic equations in finite Sobolev space in the absence of viscosity or dissipation will also be established. (Received August 11, 2005)