Uniform time of existence for solutions of the α-Euler equations

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Abstract

We consider the α-Euler equations on a bounded domain in dimension three with Navier perfect slip boundary conditions. We show that if the initial data is sufficiently smooth and if α is sufficiently small, then there exists a lower bound uniform in α for the maximal time of existence of the solution. This implies in particular the convergence of the solutions as $\alpha \to 0$ towards the solution of the incompressible Euler equation. This is joint work with V. Busuioc, M. Lopes Filho and H. Nussenzveig Lopes.

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