1022-35-158 **Igor Kukavica***, Department of Mathematics, University of Southern California, Los Angeles, CA 91107, and **Mohammed Ziane**. *Existence of solutions of the Navier-Stokes equations in a thin periodic domain with large data.*

We address the existence of strong solutions of the Navier-Stokes system in a thin periodic domain. We prove that global existince holds for a large set of initial data. The data leading to global solutions are allowed to have large fluctuations from the 2D average, and the size is estimated in terms of the thickness. (Received September 12, 2006)