1068-35-286　　　　　**Gung-Min Gie*** (`gungmin@ucr.edu`), Department of Mathematics, University of California, Riverside, 900 University Ave., Riverside, CA 92521, and **James P. Kelliher** (`kelliher@math.ucr.edu`), Department of Mathematics, University of California, Riverside, 900 University Ave., Riverside, CA 92521. *Boundary layers for the Navier-Stokes equations with the Navier friction boundary conditions.* Preliminary report.

We study the "weak" boundary layer phenomenon of the Navier-Stokes equations, supplemented with the Navier friction boundary conditions, in a general (curved) domain in $\mathbb{R}^3$ when the viscosity is small. By constructing a corrector, whose tangential components are exponentially decaying functions from the boundary, we prove the convergence, as the viscosity parameter tends to zero, of the Navier-Stokes solutions to the Euler solution in the norm of L^∞ in time and L^2 in space, as well as in that of L^2 in time and H^1 in space. This is a joint work with James P. Kelliher. (Received January 19, 2011)