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Hong Yin* (hyin@mtu.edu), Department of Mathematical Sciences, Michigan Technological University, Fisher Hall 317, 1400 Townsend Dr., Houghton, MI 49931, and **Padmanabhan Sundar** (sundar@math.lsu.edu), Department of Mathematics, Louisiana State University, Baton Rouge, LA 70803. *Stochastic Navier-Stokes Equations and Related Topics*.

The backward two-dimensional stochastic Navier-Stokes equations (BSNSEs, for short) corresponding to incompressible fluid flow in a bounded domain G are studied in this paper. Suitable a priori estimates for adapted solutions of the BSNSEs are obtained which reveal a surprising pathwise $L^\infty(H)$ bound on the solutions. The existence of solutions is shown by using a monotonicity argument. Uniqueness is proved by using a novel method that uses finite-dimensional projections, and truncations. Some recent developments on compressible fluid are also given. (Received February 04, 2008)