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**Padmanabhan Sundar** ([sundar@math.lsu.edu](mailto:sundar@math.lsu.edu)), Department of Mathematics, Louisiana State University, Baton Rouge, LA 70803, and **Hong Yin\*** ([hyin@mtu.edu](mailto:hyin@mtu.edu)), Department of Mathematical Sciences, Michigan Tech University, Fisher Hall, Room 319, 1400 Townsend Dr., Houghton, MI 49931. *Existence and Uniqueness of Solutions to the Backward 2D Stochastic Navier-Stokes Equations.*

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. The continuity of the adapted solutions with respect to the terminal data and the external body force is also established. (Received September 18, 2007)