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**S. S. Sritharan\*** ([sri@uwyo.edu](mailto:sri@uwyo.edu)), Department of Mathematics, University of Wyoming,  
Laramie, WY 82071. *Nonlinear Filtering Theory of Stochastic Navier-Stokes Equations.*

We will present a mathematical analysis of the nonlinear filtering problem for the stochastic Navier-Stokes equations. Nonlinear filtering describes the time evolution of conditional expectation of the velocity/vorticity, given partial measurements. We point out the some connection between Littlewood-Paley theory of harmonic analysis and stochastic nonlinear filtering theory as applied to this problem. Solvability of the nonlinear filtering equations will also be presented. (Received September 01, 2006)