1051-35-98 **Ricardo M. S. Rosa*** (rrosa@im.ufrj.br), Matematica, Univ. Federal do Rio de Janeiro, Av. Athos da Silveira Ramos 149, Ilha do Fundao, Caixa Postal 68530, Rio de Janeiro, RJ 21.941-909, Brazil. *Navier-Stokes equations, turbulence and statistical solutions.*

Turbulent flows appear in many different phenomena and are of fundamental importance in science and technology. Great part of the classical theory of turbulence, however, is based on heuristic arguments and empirical information. The statistical theory of turbulence aims towards a rigorous foundation for the classical theory. In this talk we motivate the definition of statistical solution for treating turbulent flows, illustrate some applications of the theory describing a few rigorous results obtained recently, and mention some delicate abstract problems connected with theory. (Received August 18, 2009)