

1104-35-184

Roger M Temam*, Department of Mathematics, Rawles Hall, Indiana University, 831 E 3rd Street, Bloomington, IN 47405. *Existence and Uniqueness of Solutions for Linear and Nonlinear Inviscid Shallow Water Equations.*

Motivated by the equations of the large scale oceans and atmosphere (primitive equations), we discuss the issue of existence and uniqueness of solutions for the linearized shallow water equations in space dimension two in a rectangle. We also study the nonlinear shallow water equations in some subcritical and supercritical situations. The choice of the suitable boundary conditions and the fact that the domain (rectangle) is not smooth, are two essential issues in this study. In particular we show how suitable boundary conditions make the initial and boundary problem mildly dissipative and well-posed. (Received August 31, 2014)