

Homework Set 3: Math 8610, Due: October 12

1. Exercise at the end of Week 5 notes (derivation of (4.57) and (4.58) for 2-D flow).
2. Show that if (1.1) in week 6 notes is replaced with a forcing f on the right side, then with mild assumptions on f you can still do a local existence argument for the regularized NS equation.
3. Derive an ϵ independent energy bound equivalent to last equation in section 1 in week 6 notes in the presence of a forcing f in a suitable space of function.
4. Prove a local existence equivalent to Proposition 2.2, week 6 notes in the presence of forcing f in a suitable function space.