

Homework 7

1. Derive the appropriate shallow water equations for a single moving layer of fluid of density ρ_2 above a rigid floor, and where above the moving fluid is a stationary fluid of density ρ_1 , where $\rho_1 < \rho_2$. Show that as $(\rho_1/\rho_2) \rightarrow 0$ the usual shallow water equations emerge.