

Physics 136b, Week 7: Turbulence

(Dated: due Feb 22, 2012)

The maximum number of points you can get for this assignment is **50**, although you could choose to do problems that worth more than 50 points.

This week we discussed turbulence, covering Chapter 15 of Blandford and Thorne (BT). [See version 1115.1.K of Chapter 15.]

1. **The 2-Dimensional Laminar Wake Behind a Cylinder.** Exercise 15.1 of BT. [15 Points]
2. **Structure of a 2-Dimensional Laminar Jet.** Exercise 15.3 of BT. [15 Points]
3. **Reynolds Stress, and Fluctuating Part of Navier-Stokes Equation in Weak Turbulence.** Exercise 15.4 of BT. [20 Points]
4. **Excitation of Earth's Normal Modes by Atmospheric Turbulence.** Exercise 15.8 of BT. [25 Points]
5. **Lyapunov Exponent.** Exercise 15.12 of BT. [15 Points]