

## CHAPTER 25: RELATIVISTIC STARS AND BLACK HOLES

### Reading:

Chapter 25 of Blandford & Thorne.

### TA:

This problem set will probably be graded by Xinkai Wu.

### Problems

Work four of the following eight problems. Pick problems that are appropriate for *you*—not too easy; not too hard.

Exercise 25.1 Connection Coefficients and Riemann in Schwarzschild

Exercise 25.2 The Bertotti-Robinson Solution

Exercise 25.3 Schwarzschild Geometry in Isotropic Coordinates

Exercise 25.5 Gravitational Redshift

Exercise 25.7 Implosion of the Surface of a Zero-Pressure Star

Exercise 25.8 Gore at the Singularity

Exercise 25.9 Wormholes

Exercise 25.10 Slices of Simultaneity in Schwarzschild Spacetime