

APM 426 / 1700
Assignment 5

Prof. McCann

Due: Thursday Feb. 16

Practice problem Schutz # 6.33
To be handed in # 5.21, 6.15 and

1. Derive a formula for the Laplacian in spherical polar co-ordinates on \mathbf{R}^3 (or \mathbf{R}^4).
2. TIME TRAVEL: It is possible that a seventy-five year old space traveller, upon his return to earth, to discover that his children and grandchildren are dead but he is just in time to meet the great-great-great grandchildren of his great-great-great grandchildren. This does not contradict the laws of relativity. But what makes such a journey impracticable?