EOS/PHYS 427 — Assignment 7

Due: Tuesday, March 21, 2023.

1. Apply the Adams-Williamson equation in integral form to compute the density $\rho(r)$ at the base of a 30-km thick outer-most shell of the Earth (i.e., $r_0 = r_E = 6400$ km and $r = 6370$ km), assuming constant seismic velocities of $\alpha = 7.00$ km/s and $\beta = 4.50$ km/s over the shell, and a density at the top of the shell of $\rho(r_0) = 2800$ kg/m^3. Take the mass of the Earth to be 6.00×10^{24} kg. (25 pts)