

Environmental Science, Problems Chapter 4

4.1

Assuming a CO_2 volume fraction of 350 ppmv, calculate the weight fraction of CO_2 . The average density of air is 1.29 kg/m^3 and the density of CO_2 is 1.98 kg/m^3 (STP).

Answer: 537 ppm (weight)

4.2

The seasonal variations in atmospheric CO_2 amount to about 4 ppmv. Estimate the total volume needed to store this amount of CO_2 in liquid phase (density 770 kg/m^3).

Answer: $1.1 \times 10^4 \text{ km}^3$