

Estimate the optical depth for infrared light with wavelength $15\text{ }\mu\text{m}$ when it travels through our atmosphere at standard temperature and pressure STP . The number density of air molecules at STP can be found from $pV = Nk_B T$.

Our air is 0.041% CO_2 (410 ppm).

Missing /var/www/paradigms_media_2/media/activity_media/molecular-absorption-cross-sections.png

Figure 1: Absorption cross sections σ_a . The graph is from *Fundamentals of Atmospheric Radiation* by Craig Bohren, a highly recommended book.