

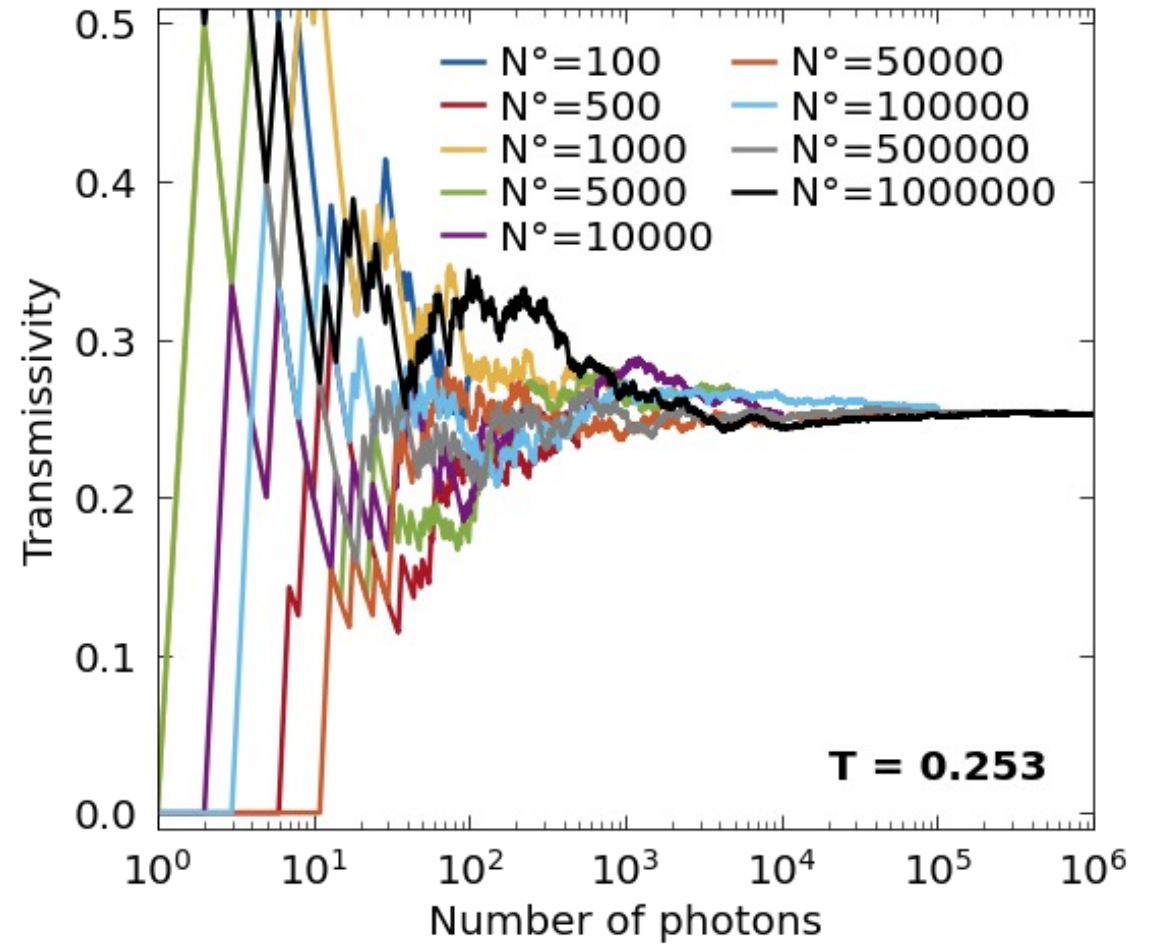
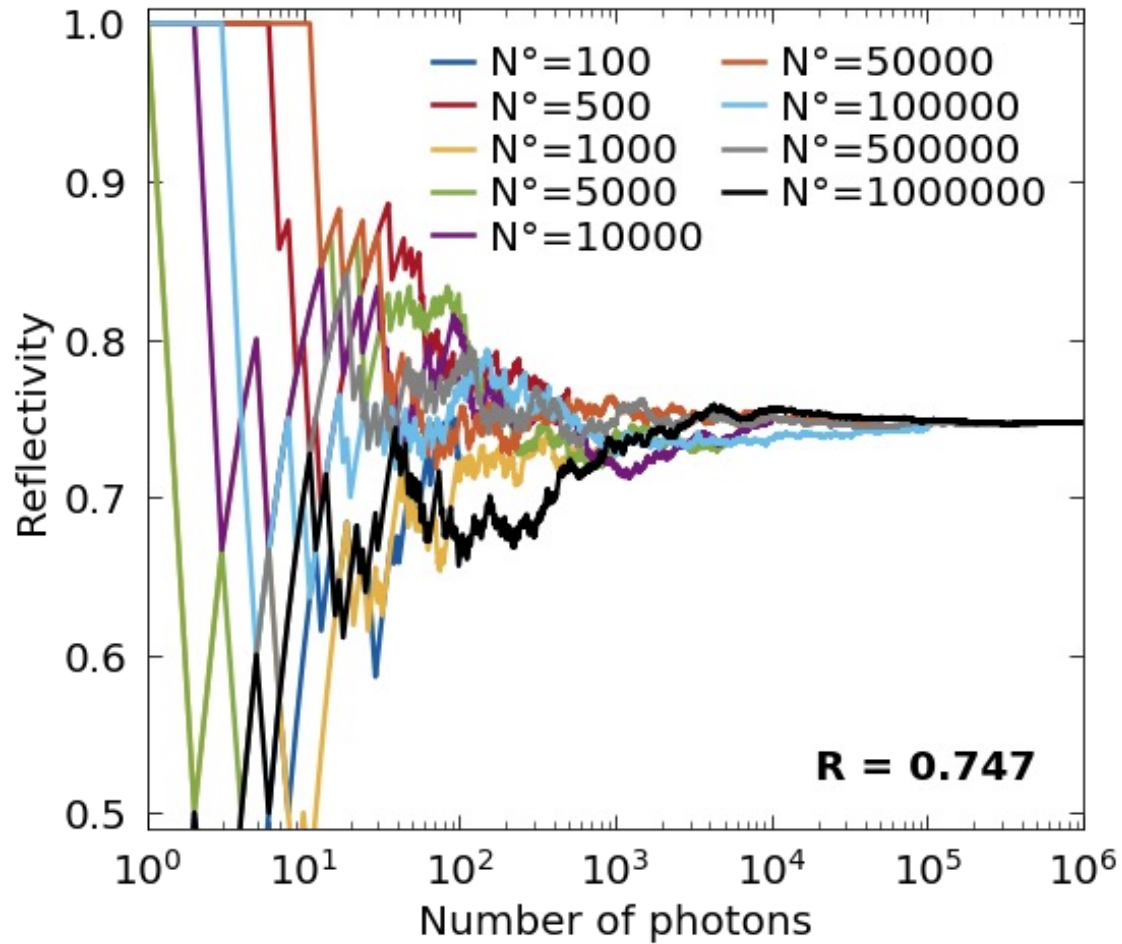
ATMO 656A – HW1

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Question 1

$g = 0.001$
 $w_0 = 0.99999$
 $\mu_0 = -0.7$
 $\text{Tau} = 4$



Number of photons for convergence: $\sim 50,000$ (16.5 s)

Question 2

With: $g = 0.001$
 $w_0 = 0.99999$
 $\mu_0 = -0.7$
 $\text{Tau} = 4$
10 iterations

- Mean Transmissivity: 0.252
- Sigma Transmissivity: 0.001
- Mean Reflectance: 0.748
- Sigma Reflectance: 0.001

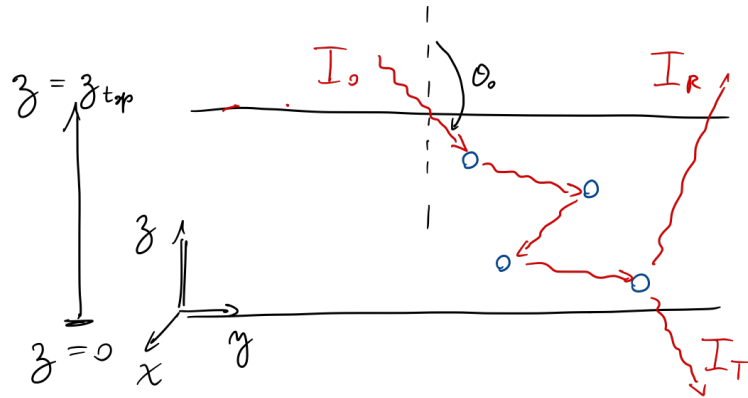
Question 3

$\tau = 4$

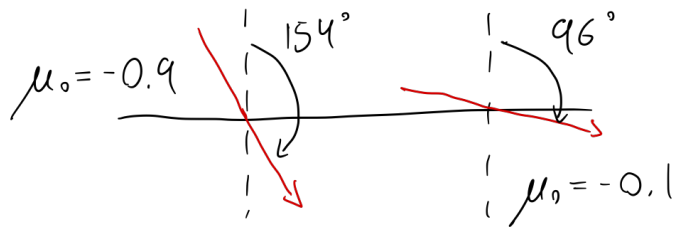
N photons = 50,000

$$\cos^{-1}(-0.9) = 154^\circ$$

$$\cos^{-1}(-0.1) = 96^\circ$$

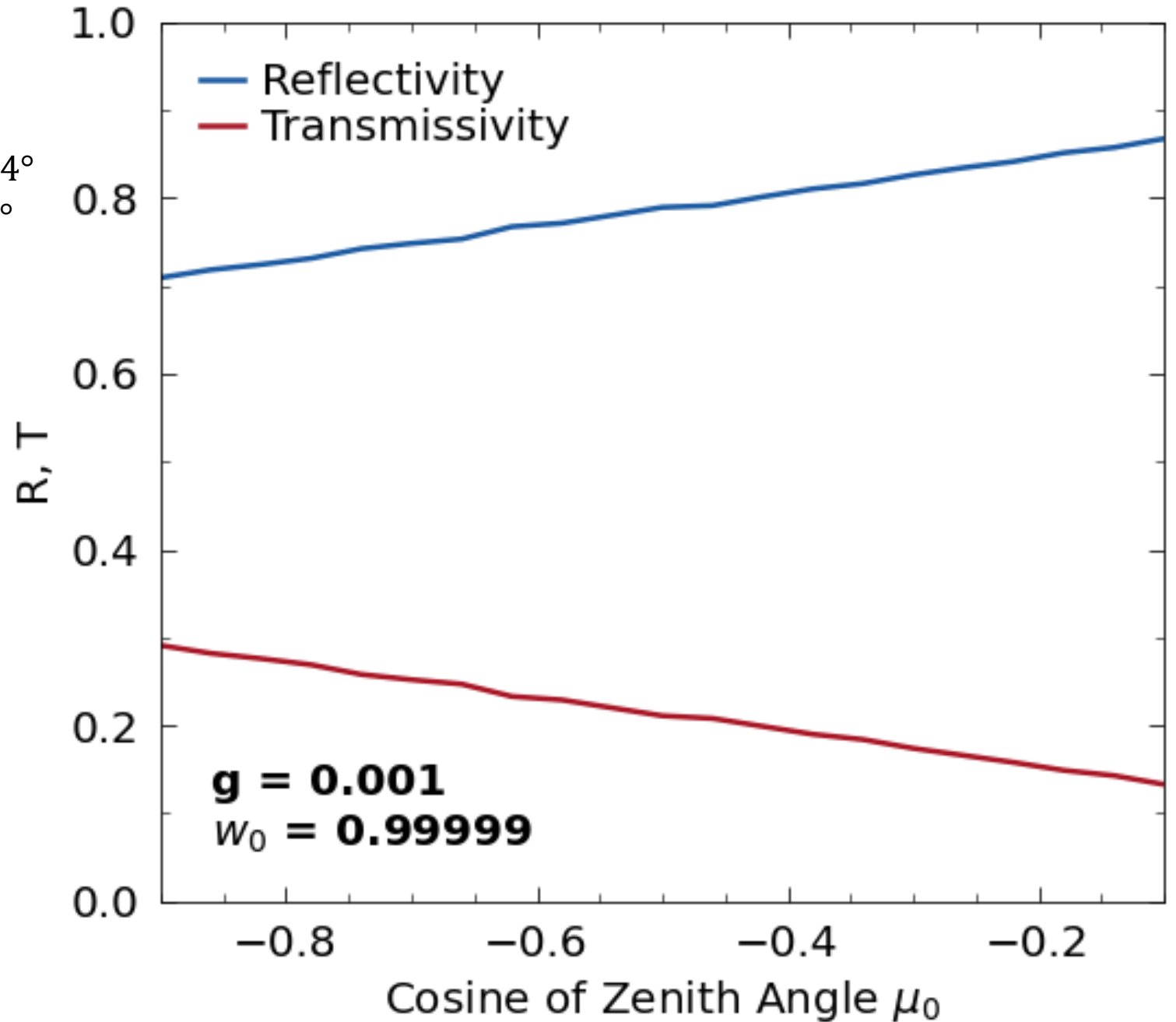


Cases:



$$* T = \frac{2}{2 + \tau_m^*} = 0.33 \quad R = \frac{\tau_m^*}{2 + \tau_m^*} = 0.66$$

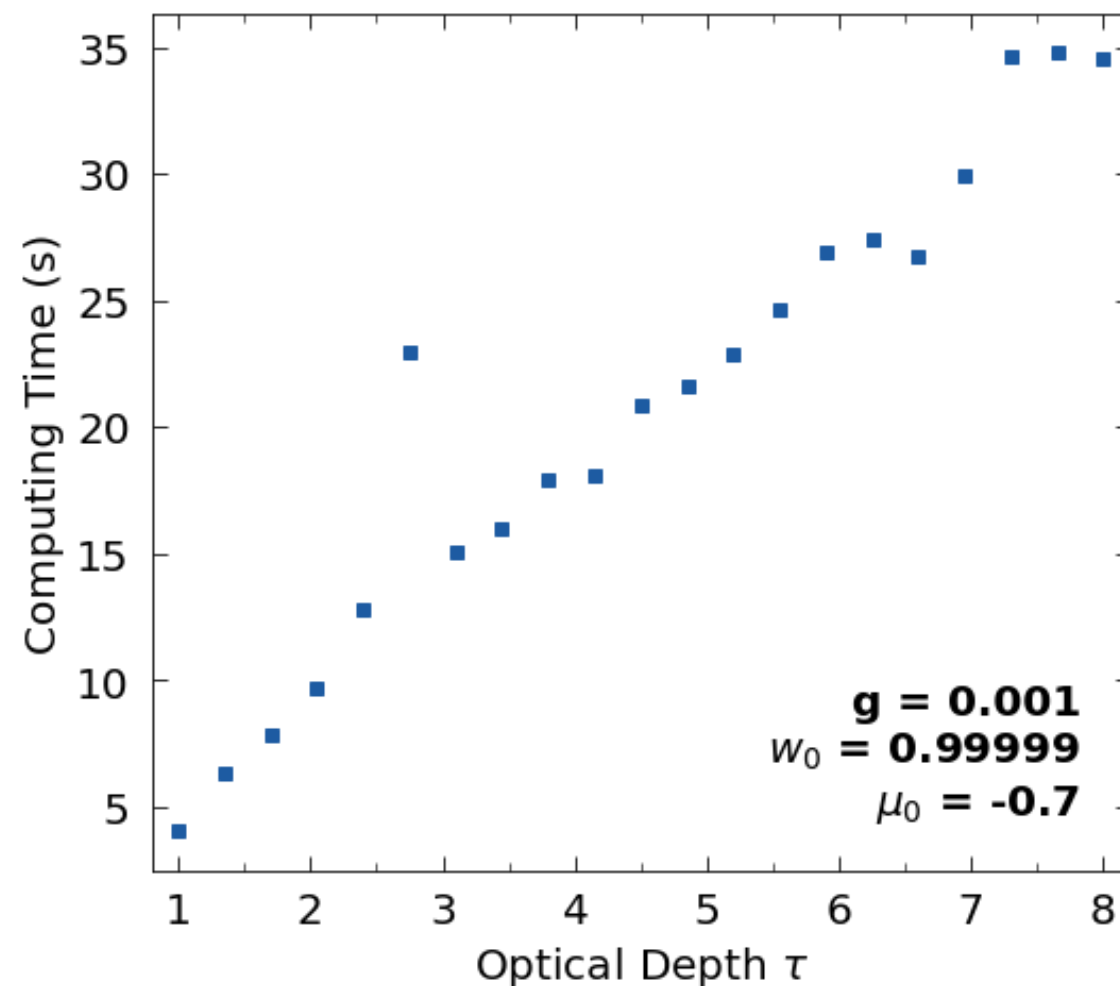
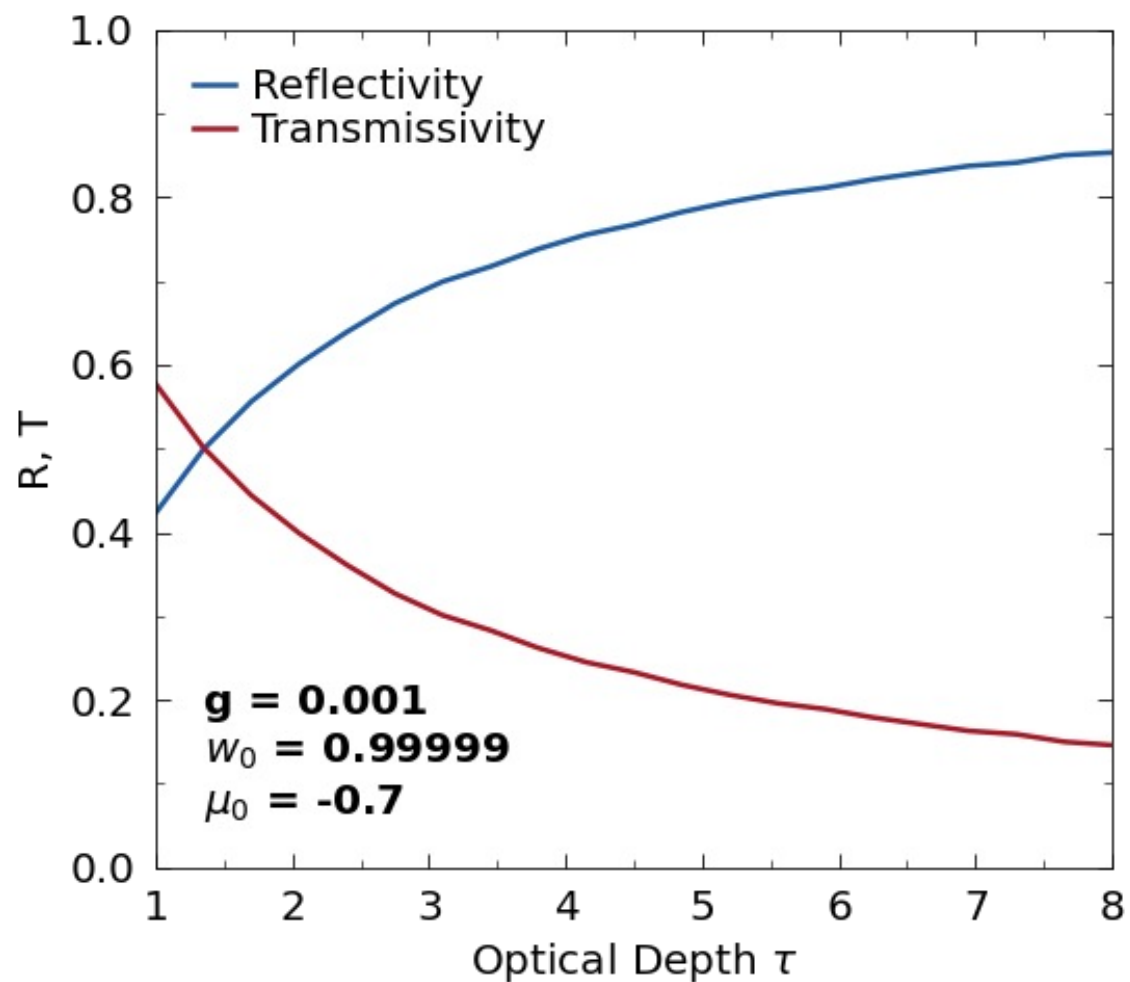
$$\tau_m^* = (1 - g)\tau$$



Question 4

N photons = 50,000

4.4 seconds per optical depth unit



Annex

