

MTEOR 3010 - Equation sheet - Exam #2

- $1 \text{ knot} = 1.15 \text{ mph}$
- $^{\circ}F = \frac{9}{5}^{\circ}C + 32$
- $\sigma = 5.67 \times 10^{-8} \frac{W}{m^2 K^4}$
- $k = 1.381 \times 10^{-23} \frac{J}{\text{deg molecule}}$
- $h = 6.63 \times 10^{-34} \text{ Js}$
- $c_1 = 3.74 \times 10^{-16} \frac{W}{m^2}$
- $c_2 = 1.44 \times 10^{-2} \text{ m K}$
- $\rho_l = 1000 \frac{kg}{m^3}$
- $r \frac{dr}{dt} = G_l S$
- $S = \frac{e - e_s}{e_s}$
- $r = \frac{2\sigma}{nkT \ln \frac{e}{e_s}}$
- $\frac{dr_1}{dt} = \frac{v_1 W_l E_c}{4\rho_l}$
- $E_{\lambda}^* = \frac{c_1}{\lambda^5 \left[e^{\frac{c_2}{\lambda T}} - 1 \right]}$
- $\lambda_{max} = \frac{2880 \mu\text{m K}}{T}$
- $E^* = \sigma T^4$
- $E_{\lambda}(z) = E_{\lambda}(\infty) e^{-\sigma_{\lambda} z}$
- $\sigma_{\lambda} = \sec\phi \int k_{\lambda} \rho dz$
- $\mu = \sec\phi \int \rho dz$