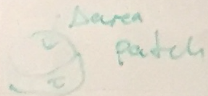
Pressure due to gravity



Gav. Force $= \frac{GM \cdot \tau \Delta area \cdot \rho}{R^2}$

Grav. Pressure $= \frac{GM \tau \rho}{R^2}$ ... must be

$\Rightarrow L < \frac{GM \cdot 4\pi c \cdot m_H}{\sigma_e} = L_E$

$L \quad (W)$

$\rightarrow F = \frac{L}{4\pi R^2} \quad \left(\frac{W}{m^2}\right)$

$= \frac{n_{photons}}{\Delta t \cdot \Delta area} \cdot \langle E_{photons} \rangle \rightarrow \frac{F}{c} \hat{=} \frac{Momentum}{\Delta time \, \Delta area} \sim$ Pressure

$E_{photon} = p_{photon} \cdot c \qquad = \frac{L}{4\pi R^2 c}$

Prob. (photon absorbed)

$= \#e^- / \Delta area \cdot \sigma_e$

$= \frac{\tau \cdot \rho}{m_H} \cdot \sigma_e$

Total photon pressure on outside surface

$= \frac{L \cdot \tau \cdot \rho \cdot \sigma_e}{4\pi R^2 c \cdot m_H}$

$(1+z) = \frac{\lambda_{obs}}{\lambda_{true}} = \sqrt{\frac{1 + v_{\parallel}/c}{1 - v_{\parallel}/c}}$