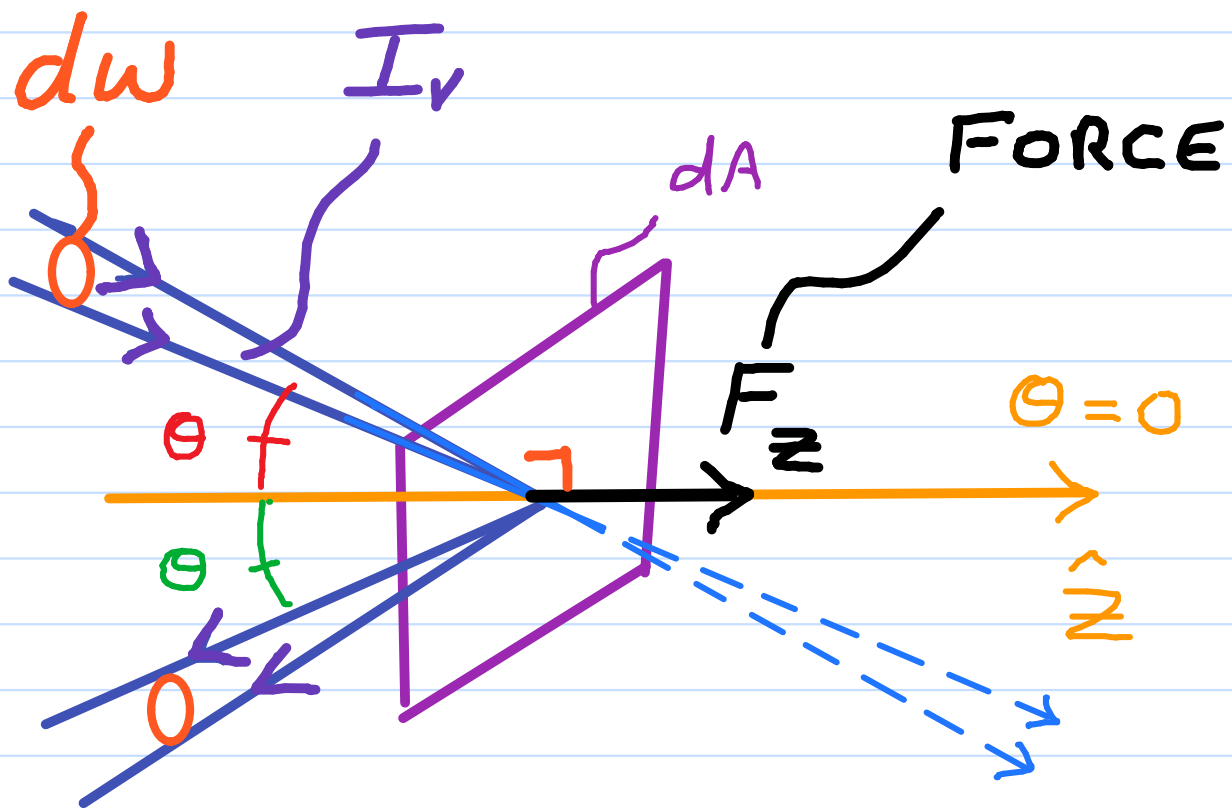


MONOCHROMATIC RADIATION PRESSURE,

$$\underline{P}_\nu(\vec{r}, \nu, t) \quad (\text{dyne/cm}^2/\text{Hz})$$

(PHOTON "GAS" MODEL)



$$P_\nu d\nu dw \equiv \frac{dF_z}{dA}$$

$$P_v dv d\omega = \frac{dF_z}{dA}$$

$$dF_z = \frac{dp_v \cos \Theta}{dt} \quad (p = \text{MOMENTUM})$$

$$\text{PHOTONS: } dp_v = \frac{dE_v}{c}$$

$$\therefore P_v dv d\omega = \frac{1}{c} \frac{dE_v \cos \Theta}{dt dA}$$

$$\text{RECALL: } dE_v \equiv \underline{I_v} \cos \Theta dA dt d\omega dv$$

$$P_v d\omega = \frac{1}{c} I_v \cos^2 \Theta d\omega$$

$$P_\nu(\vec{r}) = \frac{1}{c} \int_0^{4\pi} I_\nu(\vec{r}, \vec{l}) \cos^2 \Theta \, d\omega$$

1D AXI-SYMMETRIC MODEL:

$$I_\nu(\vec{r}, \Theta, \phi) = I_\nu(z, \mu):$$

$$P_\nu(\underline{z}) = \frac{2\pi}{c} \int_{\mu=-1}^1 \mu^2 I_\nu(z, \mu) \, d\mu$$

BOLOMETRIC RAD. PRESSURE

$P_{\text{RAD}}$  (dyne/cm<sup>2</sup>)

$$P_{\text{RAD}}(z) \equiv P(z) = \int_0^\infty P_\nu(z) \, d\nu$$

# ANGLE-MOMENTS OF $I_\nu(z, \mu)$

IN 1D AXI-SYMMETRIC MODEL

$$\eta^{\text{th}} \text{ ANGLE-MOMENT} \equiv \frac{1}{2} \int_{-1}^1 \mu^\eta I_\nu d\mu$$

$\eta = 0$ : "ZEROTH MOMENT"

$$\mu^0 = 1$$

$$\frac{1}{2} \int_{-1}^1 I_\nu(z, \mu) d\mu \equiv \underline{J_\nu(z)}$$

$\eta = 1$ : "FIRST MOMENT"

$$\frac{1}{2} \int_{-1}^1 \mu I_\nu(z, \mu) d\mu \equiv \underline{H_\nu(z)}$$

EDDINGTON FLUX,  $H_\nu \equiv \frac{F_\nu}{4\pi}$

$\eta = 2$ : "SECOND MOMENT"

$$\frac{1}{2} \int_{-1}^1 \mu^2 I_\nu(z, \mu) \equiv \underline{K_\nu(z)}$$

-THE "K INTEGRAL"

EDDINGTON FLUX,  $K_\nu \equiv \frac{c}{4\pi} P_\nu$

BOLOMETRIC:

I, J, H, K