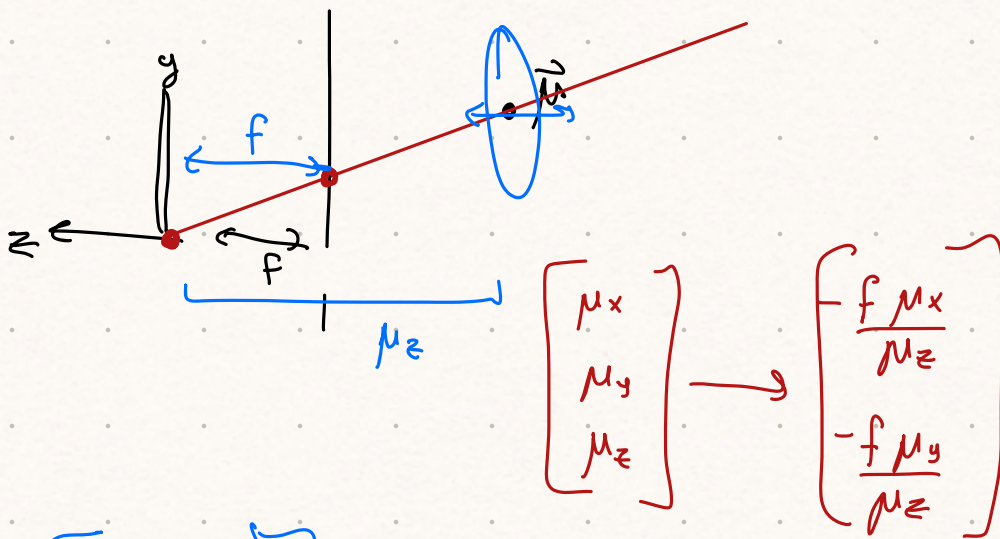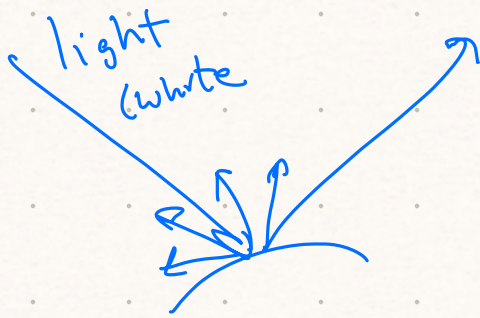$$\mu = \begin{bmatrix} \mu_x \\ \mu_y \\ \mu_z \end{bmatrix} \sim \mu$$

$$\Sigma = \begin{bmatrix} \sim & \sim & \sim \\ \sim & \sim & \sim \\ \sim & \sim & \sim \end{bmatrix} \sim \sigma$$

Suppose we're in camera 3D coords

$$\begin{bmatrix} \mu_x \\ \mu_y \\ \mu_z \end{bmatrix} \longrightarrow \begin{bmatrix} -\dfrac{f \mu_x}{\mu_z} \\ -\dfrac{f \mu_y}{\mu_z} \end{bmatrix}$$

$$\Sigma \longrightarrow \dfrac{-f}{\mu_z} \Sigma_{1:2, 1:2}$$

(in 3D)   (in 2D)

light
(white

$$f(\downarrow, \uparrow)$$

BRDF

bidirectional radiance distribution function