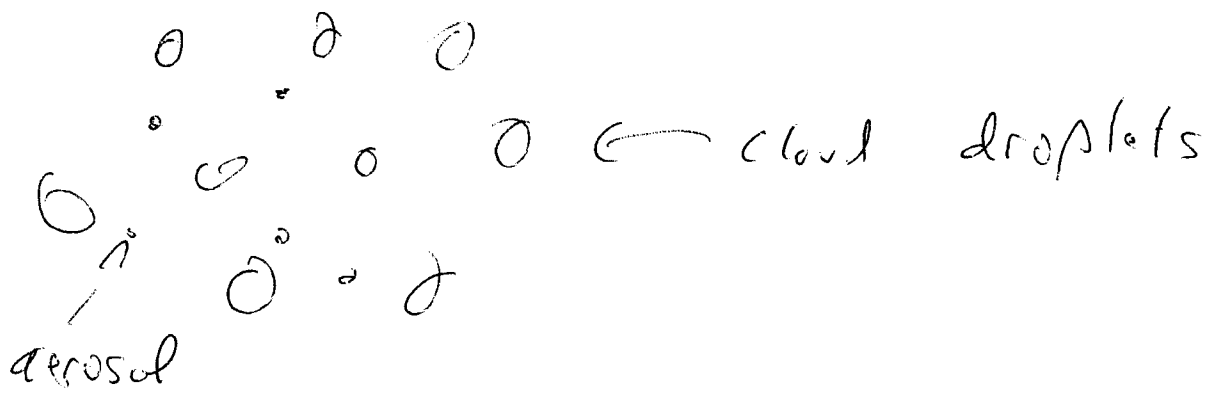


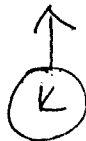


$$\bar{\tau} = \tau_{\text{cloud}} + \tau_{\text{aerosol}}$$

$$\tau = \tau_{\text{abs}} + \tau_{\text{sca}}$$

$$1 - w = \frac{\tau_{\text{abs}}^{\text{aerosol}}}{\tau_{\text{cloud}} + \tau_{\text{aerosol}}}$$

$$w^{\text{aerosol}} \approx 0.4$$



$$\tau_{\text{aerosol}} = \frac{\tau_{\text{abs}}^{\text{aerosol}}}{1 - w^{\text{aerosol}}}$$

$$w = \frac{\text{sca}}{\text{ext}}$$

$$1 - w = \frac{\text{abs}}{\text{ext}}$$

$$\text{ext} = \text{abs} + \text{sca}$$

$$1 - w = \frac{\tau_{\text{abs}}^{\text{aerosol}}}{\tau_{\text{cloud}} + \frac{\tau_{\text{abs}}^{\text{aerosol}}}{1 - w^{\text{aerosol}}}}$$

Solve for $\tau_{\text{abs}}^{\text{aerosol}}$

$$\bar{\tau} = \tau_{\text{cloud}} + \frac{\tau_{\text{abs}}^{\text{aerosol}}}{1 - w^{\text{aerosol}}}$$