# 1

1-equation model:

$$0 = \frac{\nabla_{\rm ad} T}{H_p}\Pi - \frac{C_{\rm D}}{\Lambda}\omega^{3/2} - \mathcal{F}_\omega \tag{1}$$

$$\mathcal{F}_\omega = \frac{1}{\overline{\rho}}\frac{\mathrm{d}}{\mathrm{d}z}\left(-a_\omega \overline{\rho}\Lambda\omega^{1/2}\frac{\mathrm{d}\omega}{\mathrm{d}z}\right) \tag{2}$$

Define

$$\mathcal{G}_\omega = -a_\omega \overline{\rho}\Lambda\omega^{1/2}\frac{\mathrm{d}\omega}{\mathrm{d}z} \tag{3}$$

So we have

$$\frac{\mathrm{d}\omega}{\mathrm{d}z} = -\mathcal{G}_\omega / \left(a_\omega \overline{\rho}\Lambda\omega^{1/2}\right). \tag{4}$$

and

$$\frac{\mathrm{d}\mathcal{G}_\omega}{\mathrm{d}z} = \overline{\rho}\mathcal{F}_\omega \tag{5}$$

with

$$\mathcal{F}_\omega = \frac{\nabla_{\rm ad} T}{H_p}\Pi - \frac{C_{\rm D}}{\Lambda}\omega^{3/2} \tag{6}$$

and

$$\Pi = -a_s \Lambda\omega^{1/2}\frac{\mathrm{d}s}{\mathrm{d}z} \tag{7}$$

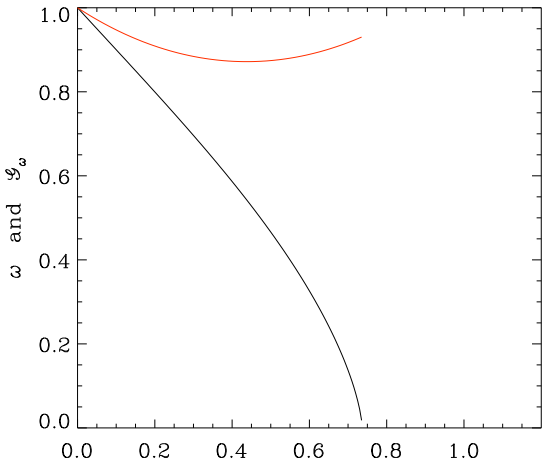


Figure 1: `r`