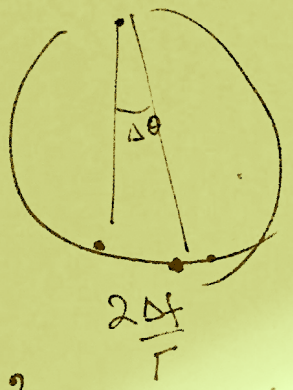
$$\frac{1}{w - w_0 + \frac{i}{2\tau}} \qquad \frac{w - w_0 - i/2\tau}{(w - w_0)^2}$$

$$\begin{cases} V(t) = e^{-\gamma t} \int_{-T}^{t} (-a) e^{\gamma t'} w(t') dt' \\ w(t) = \int_{-T}^{t} V(t') dt' \end{cases}$$

$$C = \int_{-T}^{\infty} a e^{\gamma t} w(t)$$

$$V(t) = e^{-\gamma t} \int_{-T}^{t} -a e^{\gamma t'} w(t') dt$$

$$\dot{V} = -\gamma V(t) + a w(t)$$



$$\frac{1}{\Delta f + \frac{i\Gamma}{2\pi}} = \frac{\Delta f}{\Gamma/2\pi} = \frac{2\Delta f}{\Gamma}$$

$$\frac{2}{\Gamma} \quad \frac{1}{\Gamma} \cdot (1 - \cos 2\theta)$$

$$\frac{1}{\Gamma} 2\Delta\theta^2$$

$$\frac{2\Delta f}{\Gamma} = \Delta\theta$$

$$\ddot{\Delta\theta} = -\frac{4}{\Gamma} \Delta\theta$$

$$\ddot{\Delta\theta} = -g \cdot \frac{4}{\Gamma} \Delta\theta + \gamma \dot{\Delta\theta}$$

$$\frac{\Delta f}{\Gamma} \qquad \Delta\theta$$

$$\Delta f = -a \Gamma \Delta\theta$$

$$\ddot{\Delta\theta} = -\frac{g}{L} \Delta\theta - \gamma \dot{\Delta\theta} \qquad (w_0^2 \downarrow)$$

$$\Delta\theta = \int w \, dt$$

$$\begin{cases} \dot{w} = -\gamma w - w_0^2 \Delta\theta \\ \dot{\theta} = w \end{cases}$$

$$\dot{w} = -\gamma w - w_0^2 \Delta\theta(t)$$

$$w = e^{-\gamma t} \int^{t} (-w_0^2) e^{\gamma t'} \Delta\theta(t') dt'$$