Delayed 'negative' feedback

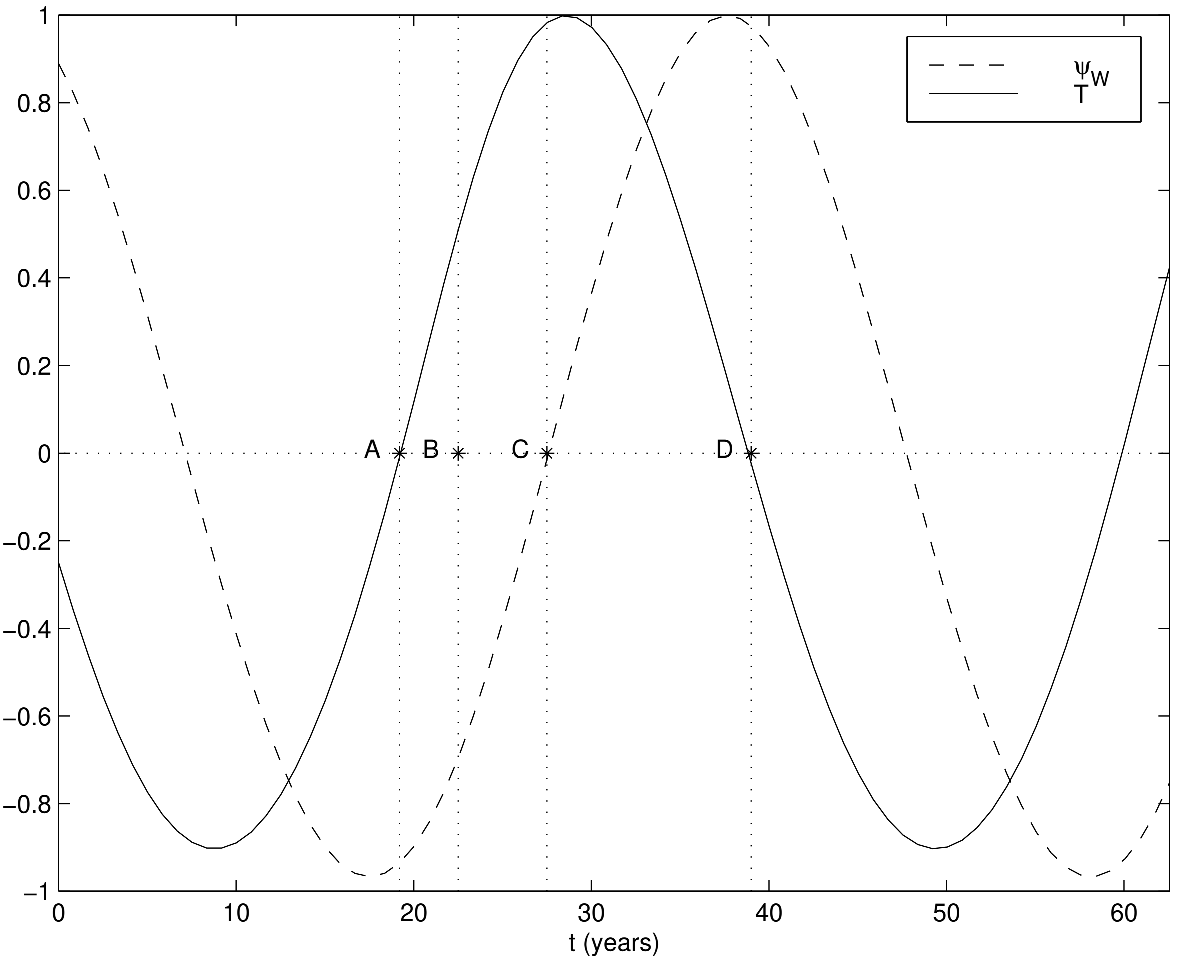
◇ For weak flow the oceans can be zonally averaged

$$\overline{vT} \propto -\psi_w^2 \bar{T}_y; \quad \bar{T}_t = \mu \left(\psi_w^2 \bar{T}_y\right)_y + \lambda(\bar{\theta} - \bar{T})$$

The gyres transport heat down-gradient.

◇ The 'diffusivity', ψ_w^2, is delayed by Rossby Waves.

$$\psi_w \propto \int_{t-t_o}^{t} \bar{\tau}_y(t')\, dt'$$



◇ The period is set by the RW transit time.