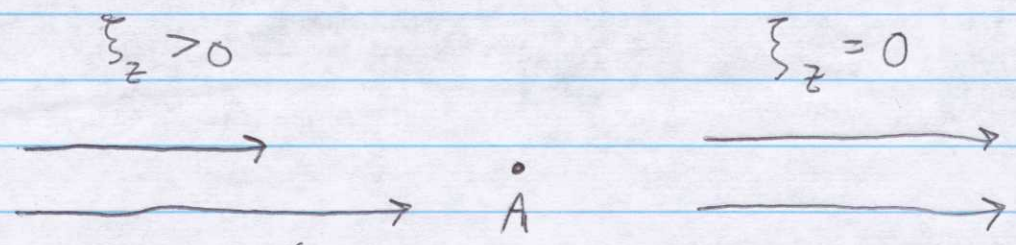


REVISED
10/3/02

CYCLONIC Shear ($\frac{\partial u_g}{\partial y} < 0$)

Zero Shear ($\frac{\partial u_g}{\partial y} = 0$)

North ↑



At A: $\frac{d(\xi_z + f)}{dt} = -(f + \xi_z) \left[\frac{\partial u}{\partial x} + \frac{\partial v}{\partial y} \right]$

$$-\frac{d(\xi_z + f)}{dt} = -\frac{u \partial \xi_z}{\partial x} = \left(f + \xi_z \right) \frac{\partial u}{\partial x}$$

$-\frac{u \partial \xi_z}{\partial x} > 0$ Positive Vorticity Advection

$\frac{\partial u}{\partial x} > 0$ Divergence

Thus, since this vorticity advection is greatest in the upper troposphere

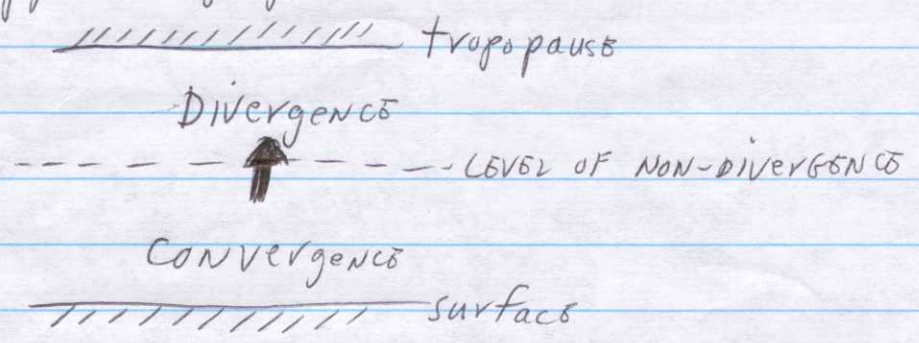


FIGURE: Association of Positive vorticity advection (shear vorticity) with vertical motion