Convergence and Divergence

**Convergence**
- Acts to increase air pressure
- Associated with lows

**Divergence**
- Acts to decrease air pressure
- Associated with highs

Vertical Motion

- Convergence at the surface and divergence aloft lead to *ascending* (rising) air
  - Divergence aloft must be stronger for low to develop and maintain itself
- Divergence at the surface and convergence aloft lead to *descending* (sinking) air
  - Convergence aloft must be stronger for high to develop and maintain itself
- Air moves vertically to maintain hydrostatic balance

Development of Surface High and Low Pressure Systems

- Trough or ridge develops in flow aloft
- Leads to areas of convergence/divergence
  - Pressure rises or falls at the surface
- To strengthen, convergence/divergence aloft must be stronger than divergence/convergence at surface
- Friction acts to kill the system
- Eventually friction wins and dissipates pressure systems
Jet Streak

Curved Jet Streak Flow

Multiple Jet Streaks

Does Theory Work in Practice?

Combined Effects of Jet Stream and Thermodynamic Processes