

ATMOSPHERIC DYNAMICS

- Introduction
- Coordinate systems. Equations of motion. Full form and simplifications.
- Dynamic and thermodynamic stability/instability.
- Internal and external gravity waves. Taylor Goldstein equation. Scorer parameter.
- Ageostrophic wind. Applications.
- Streamfunction and velocity potential. Helmholtz decomposition. Potential vorticity. Conservation and invertibility.
- Geopotential tendency equation. Applications
- Vorticity equation. Applications
- Omega equation. Semi-geostrophic form. Q-vectors. Applications.
- Basic model of baroclinic development.