







## Kinds of Heat Radiant energy, EM radiation Sensible heat, actual temperature change Latent heat Energy stored as a result of phase change I.e. evporation/condensation, freezing/melting Evaporation: sensible→ latent Condensation: latent → sensible No heat is ever gained or lost (1<sup>st</sup> Law of Thermodynamics) But it may become unavailable to do work (2)

 But it may become unavailable to do work (2<sup>nd</sup> Law)

















## Summary

For next time, read Emanuel 41-47, Tradewinds

- In the Tropics:

   Convection transports heat upward
   More important than IR radiation

   Kinds of heat

   EM radiation
   Sensible: Temperature change
   Latent: Stored in water vapor

   Air-mass cumulus life cycle-stages

   Cumulus
   Mature
   Dissipating
   Tropical squall lines
   Replace warm moist surface air with cold wake, or cold pool
   Suppress convection for 2-4 days