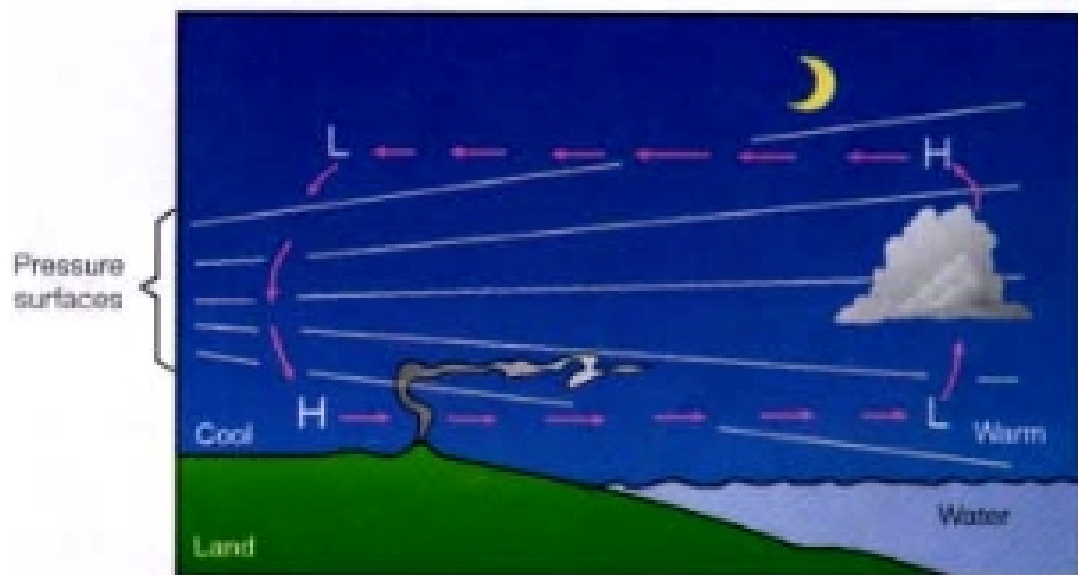
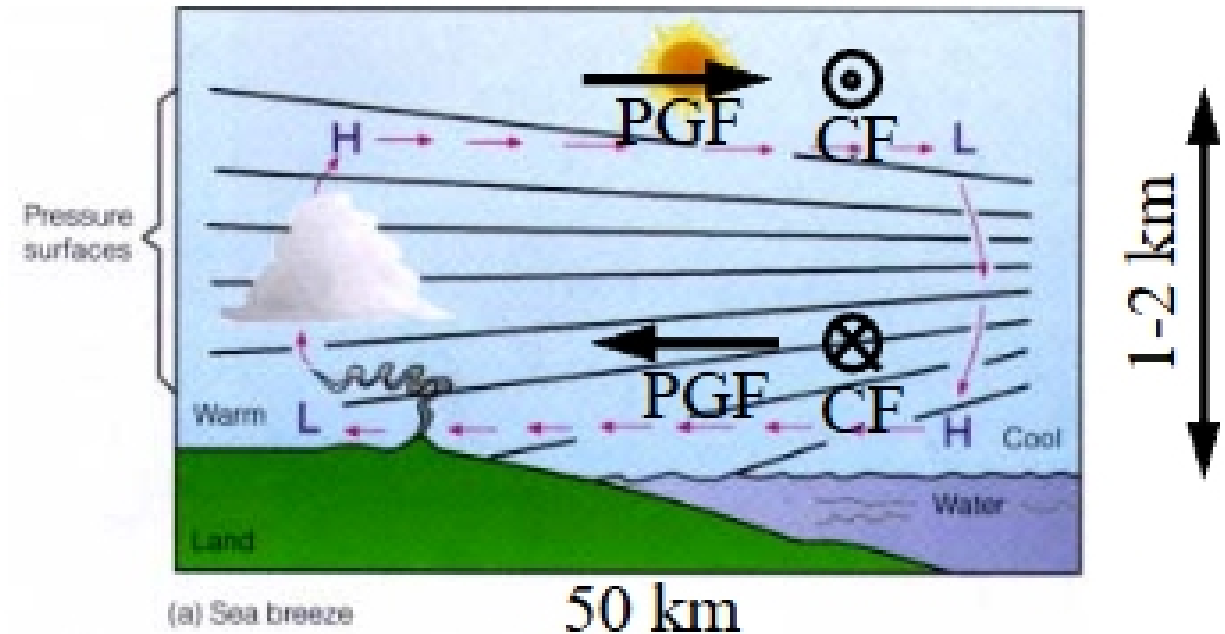


Lecture 11. Local Circulations II

Land/Sea Breeze - A Thermally Driven Circulation

- In colder air, pressure drops faster with height
- Air moves around circulation in a couple of hours, so Coriolis deflection not too important.



The Florida Sea Breeze

- During most summer days, Florida's weather consists of afternoon thunderstorms over the warm land, which first develop at the inland edge of the sea-breeze
- At night, thunderstorms develop over the ocean just offshore of the land breeze.

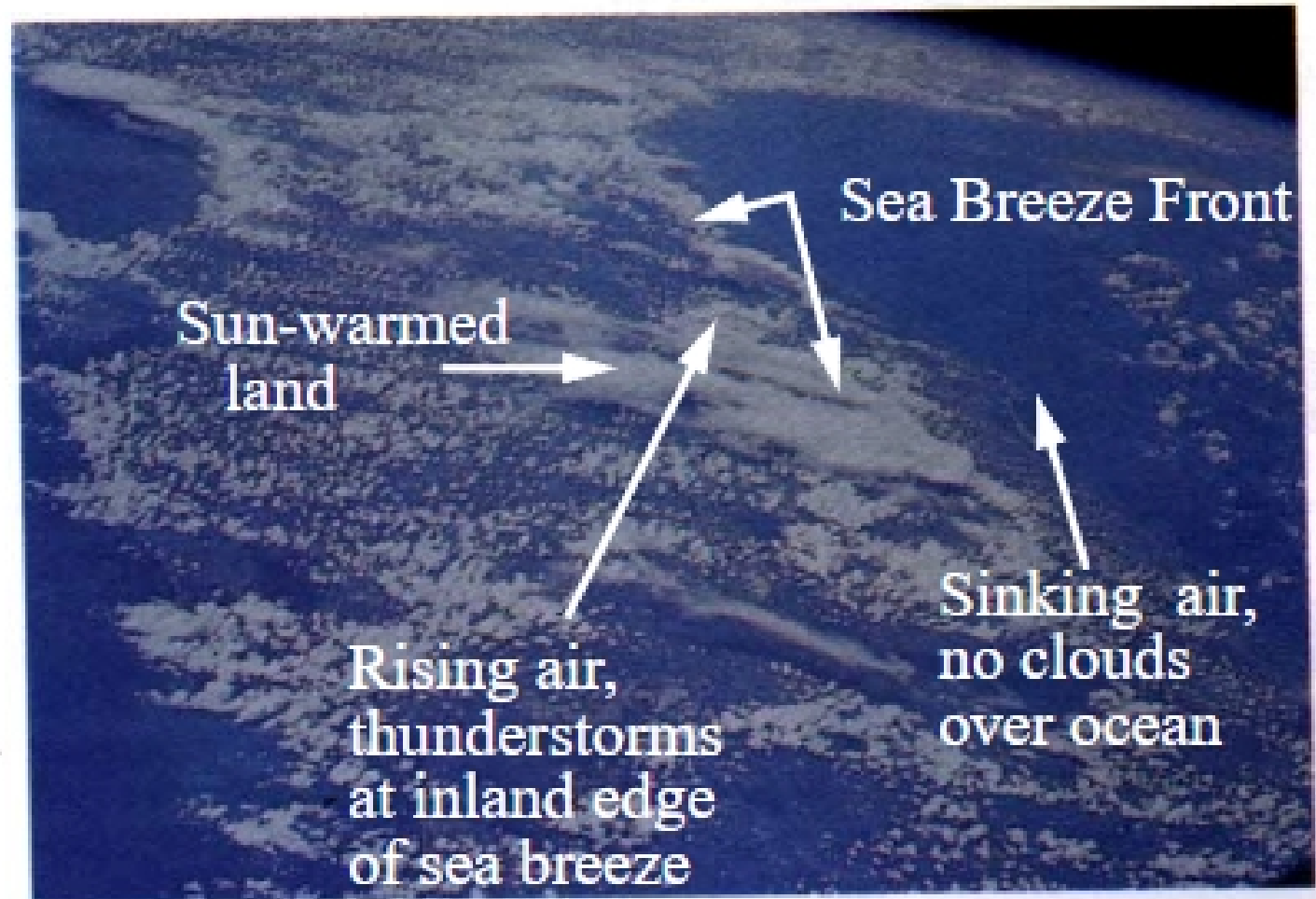
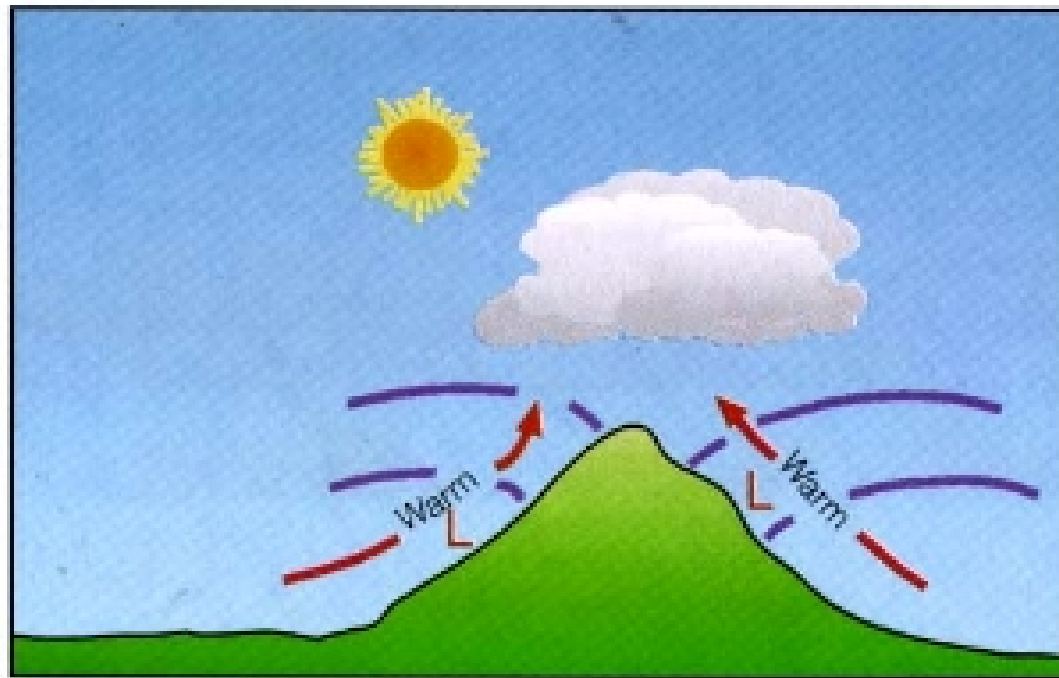


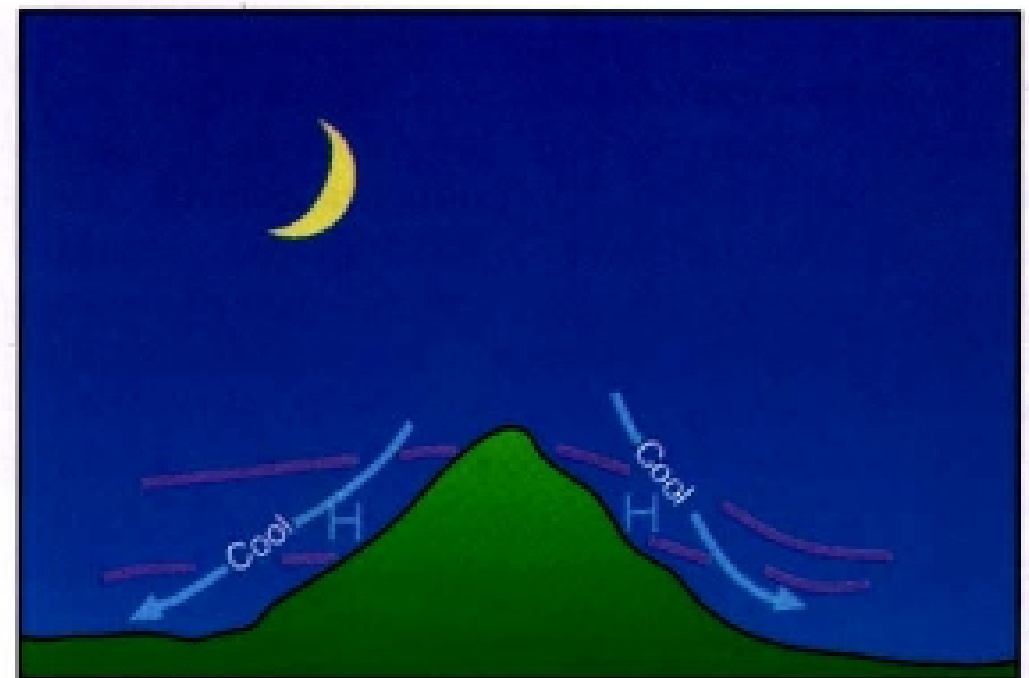
Figure 5.10

Cumulus clouds building over the warm Florida landscape. Each tiny cloud represents a region where thermals are rising from the surface. The clear areas between the clouds are regions where the air is sinking. Clouds are notably absent over the slightly cooler water.

Mountain/Valley Circulations



Valley Breeze



Mountain Breeze

Figure 7.8 EOM

Valley breezes blow uphill during the day; mountain breezes blow downhill at night. (The Ls and Hs represent pressure, while the purple lines are pressure surfaces.)

- Day: Air near slopes warms, rises
Pressure surfaces further apart where air warm, less dense
Horizontal pressure gradient pulls air toward mountain during day.
- Night: Air near slopes cools, sinks