Cloud 1
MCEN 4228
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Cloud 1 (Altocumulus)

This assignment is observing clouds that show airflow in the nature of the sky that we cannot control. I've taken a cloud picture on Saturday, February 25, 2006 between 3pm and 4pm. The weather was warm and stable when I felt in the outside. When I looked on the sky, there was a rotor clouds forming very quickly. When I ran to my bag pack to grab my camera, the clouds were deformed already. The air was moving fast in the upper atmosphere. I presume the air was condensing the moisture very rapidly and circularize it. However, I found lenticular clouds formed very far south of the sky. It was caused by Lee waves that pass over the mountains as shown in Figure 1.

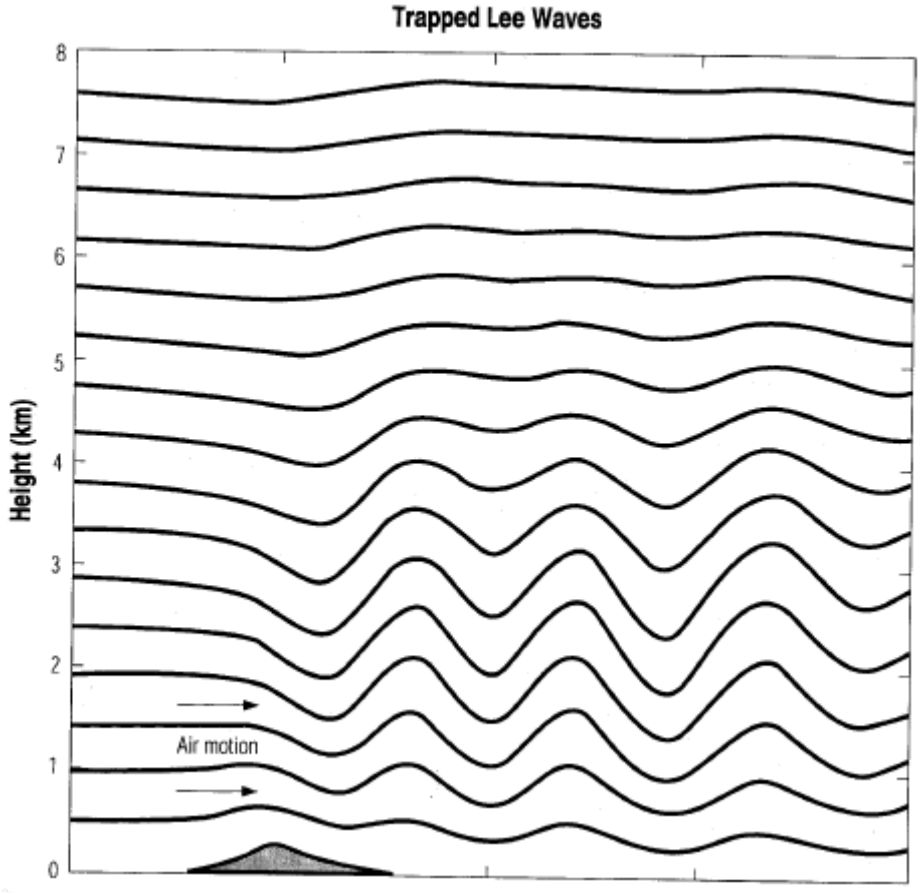

Figure 1: Trapped Lee Waves[1]

This Lee Waves usually occurs when the wind crosses a narrow mountain range. It is

usually turbulent at lower altitude. The wind speed increases near the ridge.

Figure 2: An Example of Lenticular Clouds[1]

Figure 2 is an example of Lenticular Clouds due to smaller scale wave activity. Figure 3 is the picture I actually took on
Saturday.

Figure 3: Picture taken on Feb. 25 2006 between 3pm and 4pm

The white small clouds are locally formed cumulus that can be ignored. The far back

long wave clouds are lenticular clouds that can be compared with the example. I was looking to the south near ITLL(Integrated Teaching and Learning Laboratory) building parking lot. The image is typical clouds formation over Boulder, Colorado. I just estimated cloud distance from the camera to the cloud might be at least 10miles apart and a 2~4 km above the around. Unfortunately, I could not collect archived analyzed data for that day, Schew-T plot as well. However, the atmospheric condition would be stable at upper atmosphere and unstable at lower atmosphere.