

Weather Report (2010/03/07)

Following the observations made at Meteorological Facilities of CLA, this day was the one which had the great quantity of clouds above Alcântara, reaching 5/8 at 10:00 UTC. It was observed three different types of clouds during the day: Stratocumulus and Cumulus with a base height between 450 and 600 m and Cirrus with a base height of 9000 m. During the afternoon some convective clouds were observed south of CLA. But as the wind direction was predominantly from NE (Figure 1) this system did not reach Alcântara. Figure 2 shows that the afternoon was the period of the day that presented the greatest wind speed values, and during the morning the wind was near zero.

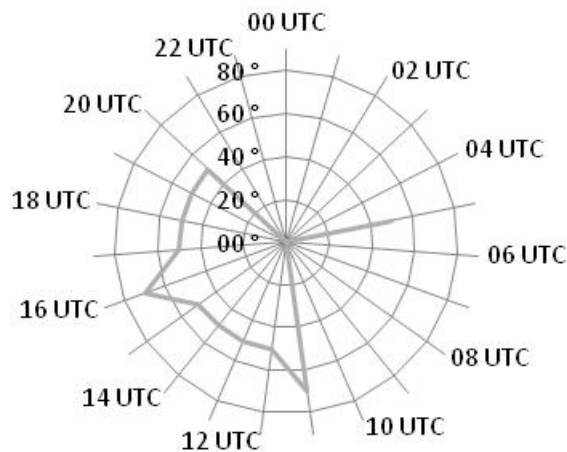


Figure 1 – Hourly wind direction for 2010/03/07.

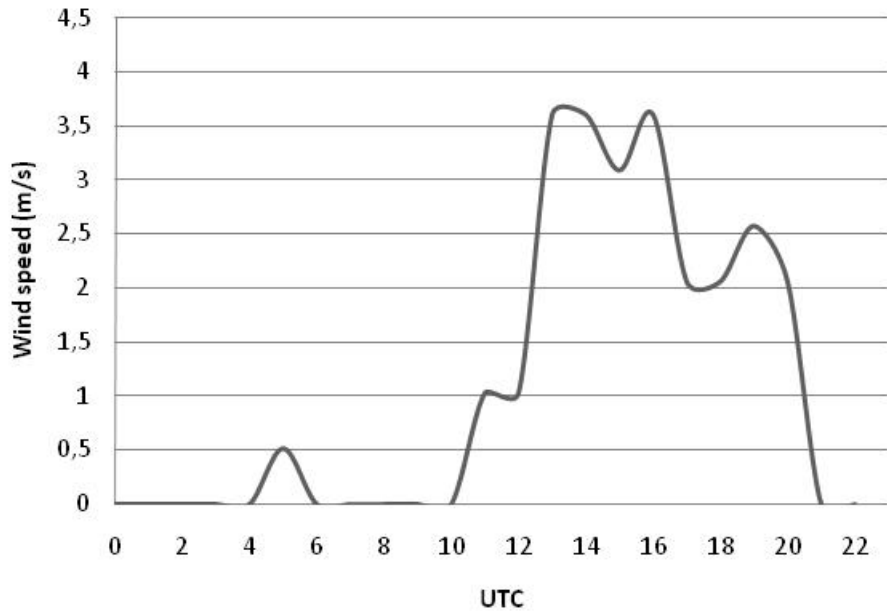


Figure 2 – Hourly wind speed for 2010/03/07.

The air temperature and mixing ratio daily variations are presented at Figure 3. The amplitude of air temperature was about 5.5 °C with a minimum during the morning and a in the afternoon. It can be noted at Figure 3 that the amplitude of mixing ratio variations was bigger than in the previous day (17.5-21.0 g/kg). A small tendency is also observed, with an increase of mixing ratio during the day. The sea level pressure variation is shown at Figure 4.

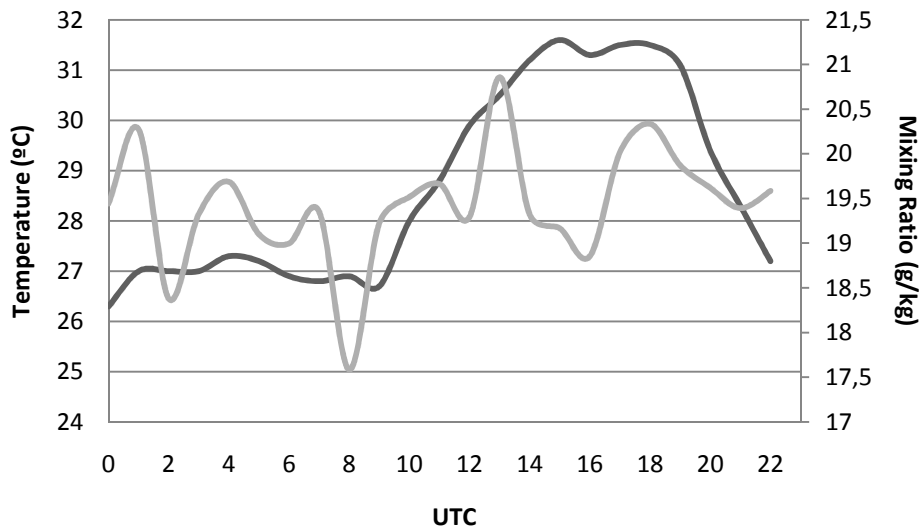


Figure 3 – Hourly temperature (black) and mixing ratio (gray) for 2010/03/07.

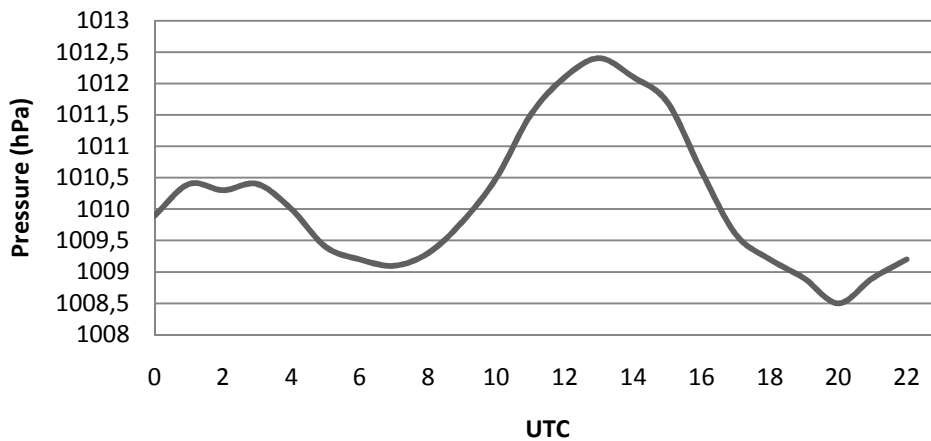


Figure 4 – Hourly sea level pressure for 2010/03/07.

The thermodynamical conditions at São Luis airport station can be seen at Figure 5. The atmosphere did not present large values of instability as in the previous day.

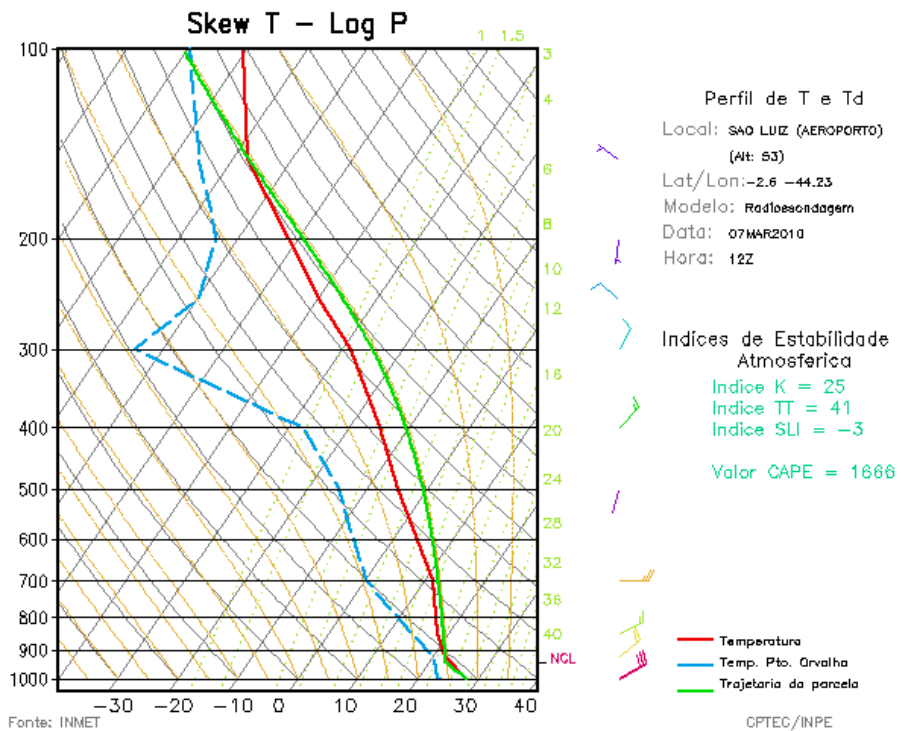


Figure 5 – Thermodynamic profile at São Luis Airport Station.

No rain records were made by any instruments of the GPM field campaign in the CLA area. However, the CLA RADAR observed a precipitating system in the main line of the measurements with a distance of 14 km at 12:54 UTC (Figure 6).

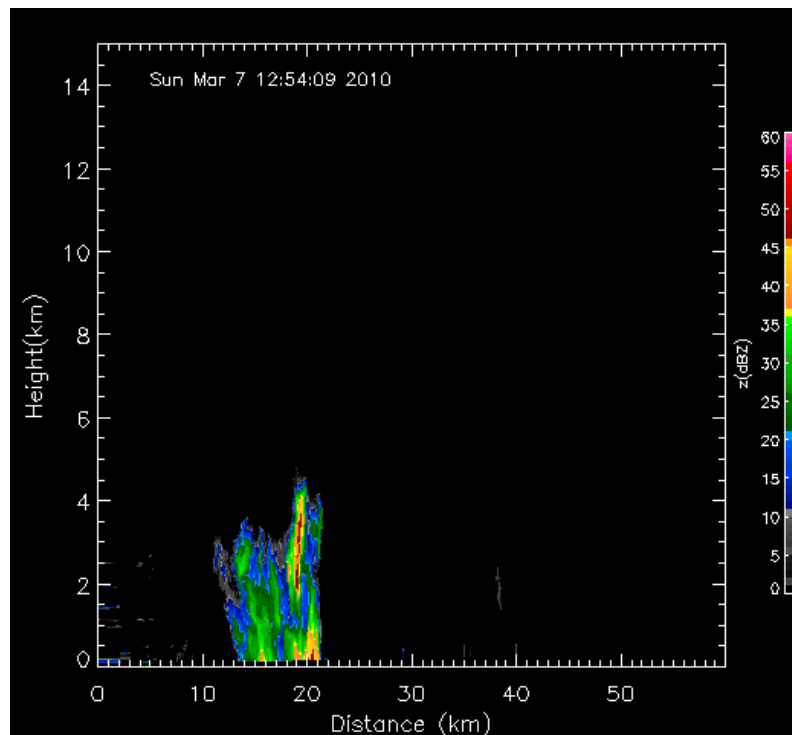
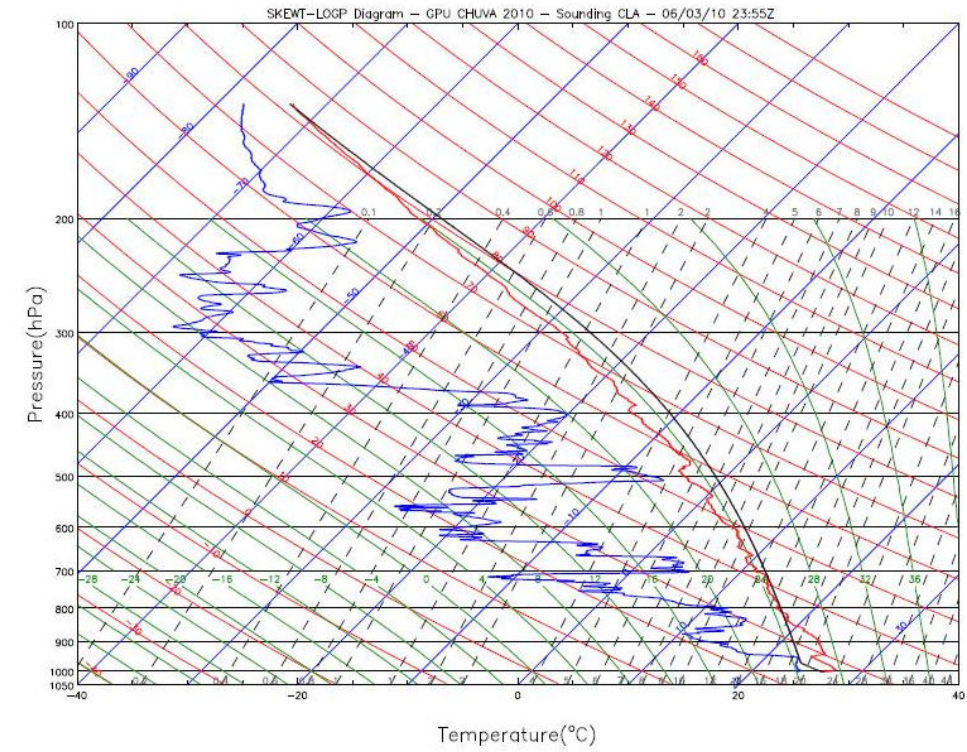
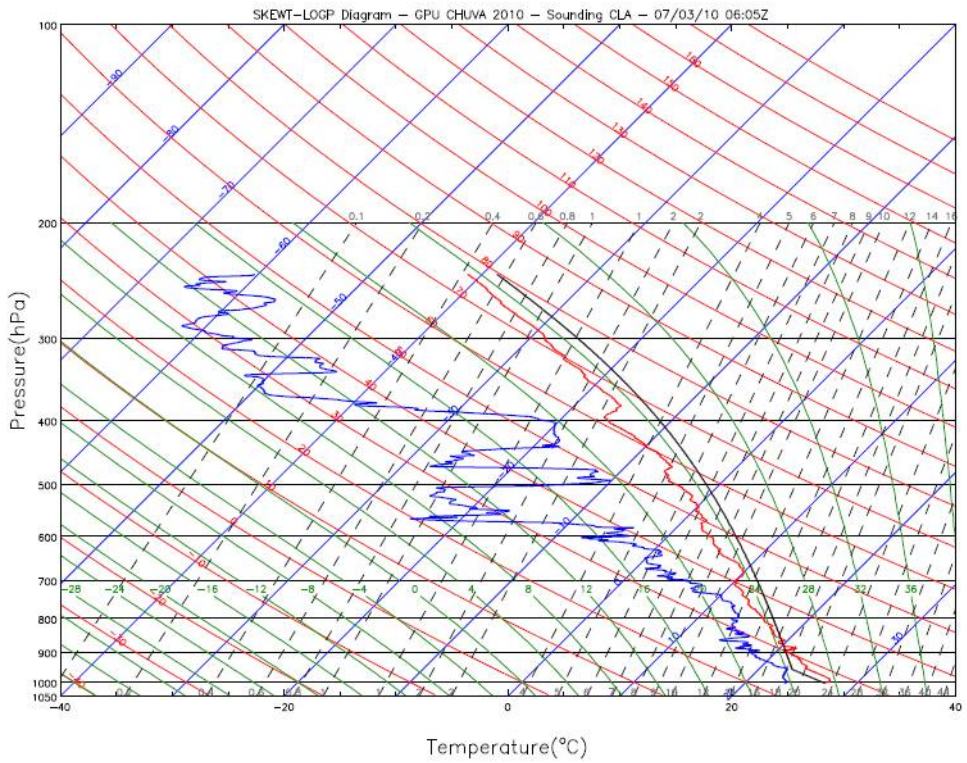


Figure 6 – RHI at 141.2° azimuth from CLA RADAR.

The instability conditions obtained by the launching of radiosondes at the Meteorological Facilities of CLA can be seen at Figure 7.



(a)



(b)

Figure 7 – Sequence of SkewT LogP diagrams for March, 7. Continue.

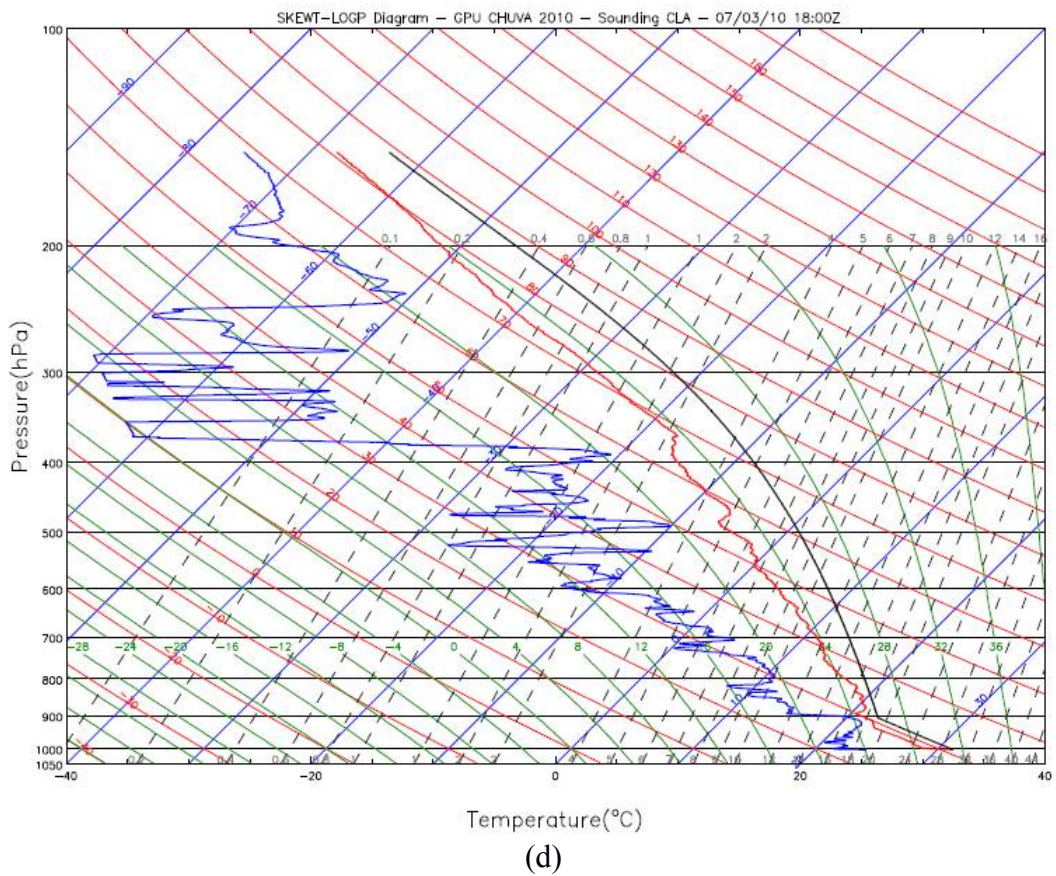
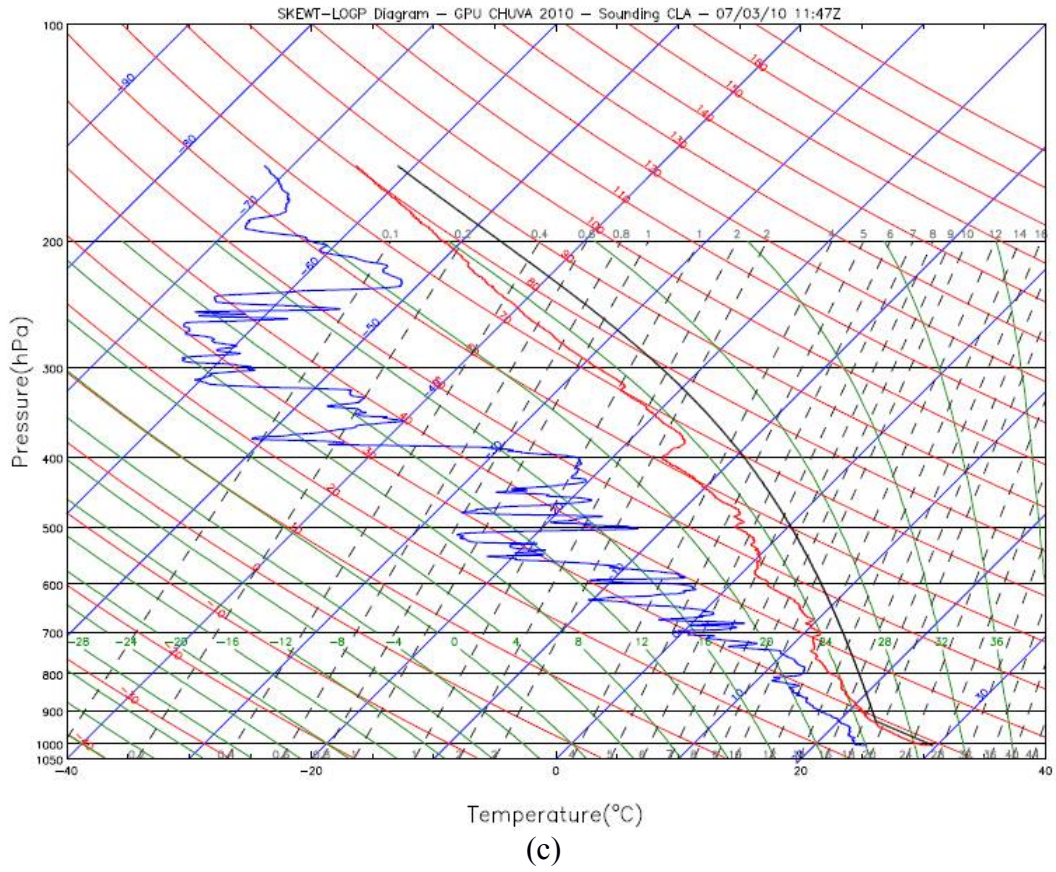


Figure 7 – Conclusion.