

Weather Report (2010/03/13)

In March 13th, the observations made at Meteorological Facilities of CLA showed more clouds than previous days above Alcântara. In the beginning and end of day the sky was totally covered. Several kinds of clouds were observed during this day, but the stratocumulus, cumulonimbus and cumulus presented the most frequency. The cumulonimbus presented base height at 600 m. The Fig. 1 showed that the morning presented the greatest wind speed values, and during the afternoon the wind was regular with predominant direction of Northeast. Hourly variations of the air temperature and mixing ratio are presented in Fig. 2. A minimum and a maximum of air temperature were observed, computing 6 °C difference between each one, with minimum along the morning and maximum in the afternoon. It can be noted in Fig. 2 that the mixing ratio showed great variability during the day, mainly between 04 and 16 UTC. The sea level pressure variation is shown in Fig. 3.

Light and heavy rains were observed during the day, mainly before the 8 UTC. This precipitation occurred mainly in radar and inpe sites at 06 UTC. All rain gauges registered rainfall, except in village's site did not present accumulated precipitation (Fig. 4). The maximum amount observed was 22 mm of precipitation in radar site. The upper level cyclonic vortex have influenced in the circulation above experiment area. Several rain systems caused precipitation in adjacent areas. Lighting was observed in these areas. The CLA RADAR also registered the precipitation at 6 UTC (Fig. 5). The RHI echoes shows that the precipitating cloud top to reached to a height of 14 km and the rain duration was 3 hours. The thermodynamical conditions at São Luis airport station can be seen at Figure 6. The atmosphere presented great values of instability, approximately 2020 J/kg. The Skew T – log P diagram obtained by the radiosondes at the Meteorological Facilities of CLA can be seen at Fig. 7.

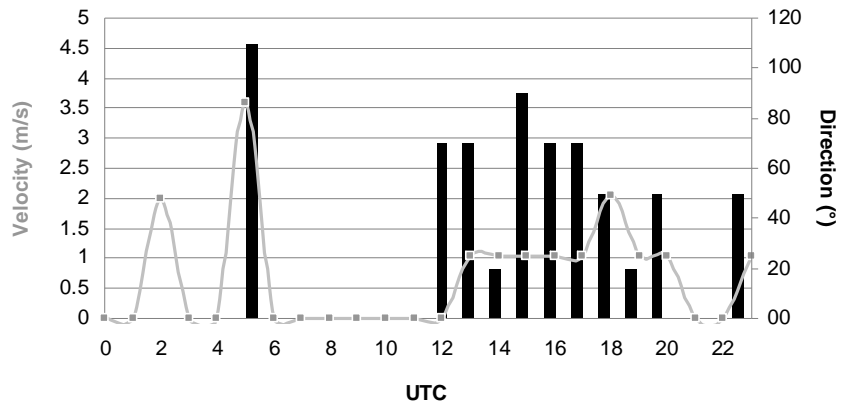


Figure 1 – Hourly wind direction and velocity for 2010/03/13.

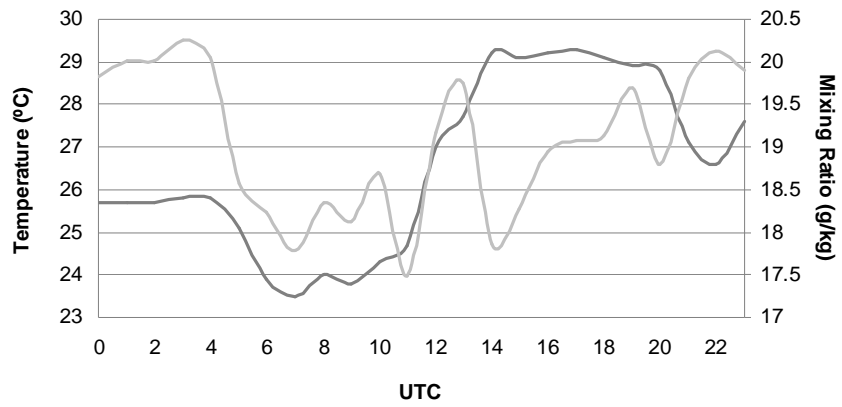


Figure 2 – Hourly temperature (black) and mixing ratio (gray) for 2010/03/13.

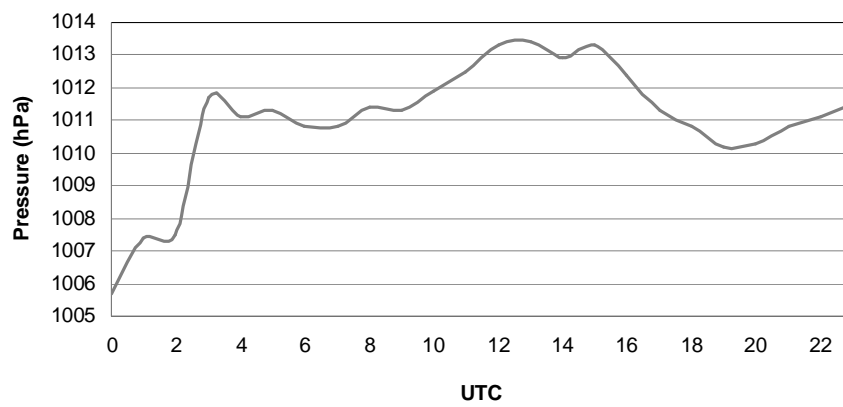


Figure 3 – Hourly sea level pressure for 2010/03/13.

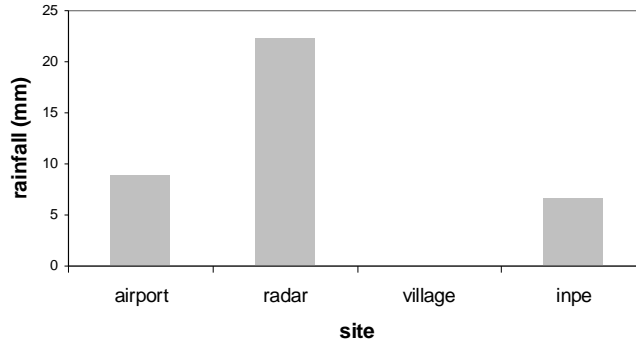


Figure 4 – Accumulated rainfall for 2010/03/13.

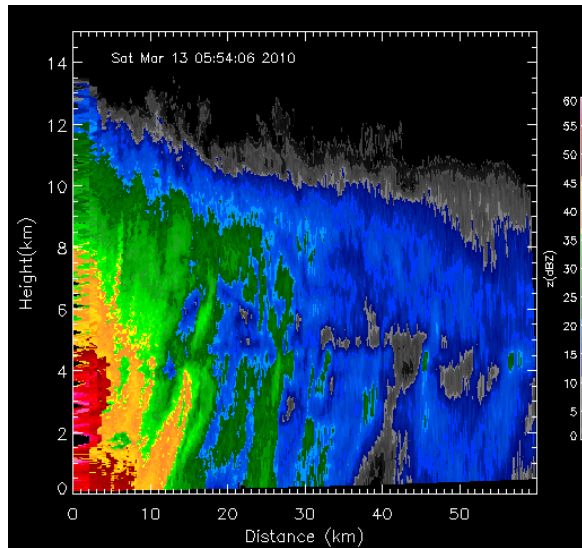


Figure 5 – RHI at 141.2 ° azimuth from CLA RADAR.

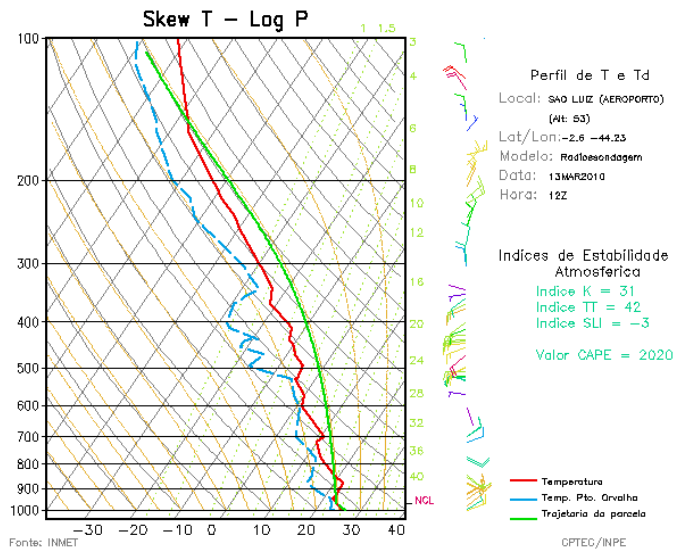


Figure 6 – SkewT LogP diagrams in São Luis airport (Near to Alcântara).

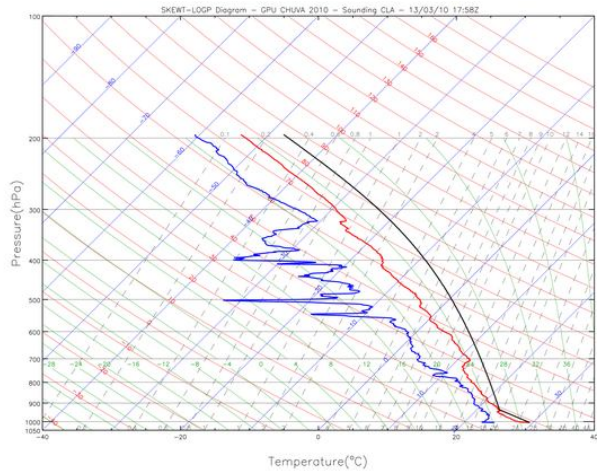
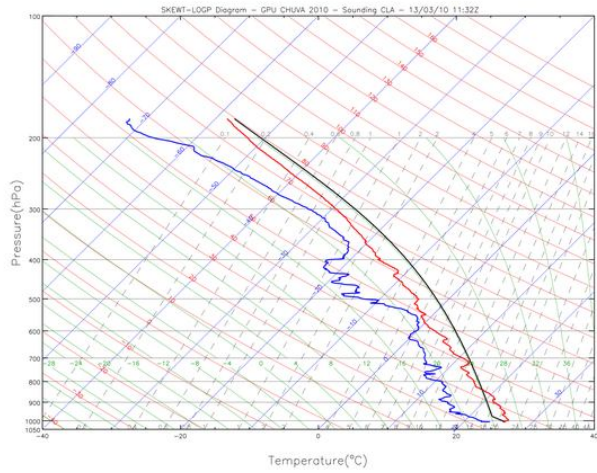
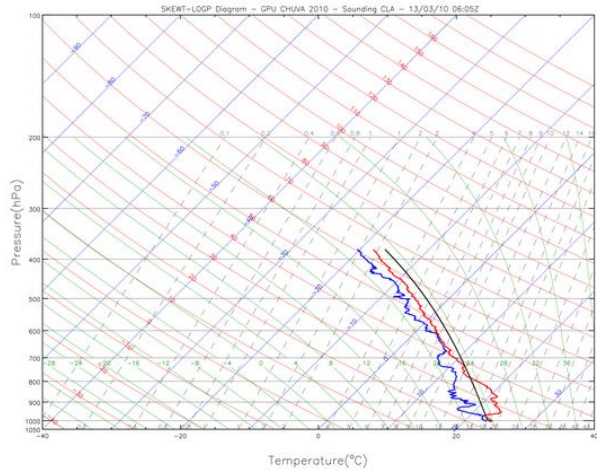


Figure 7 – Sequence of SkewT LogP diagrams. Continue.

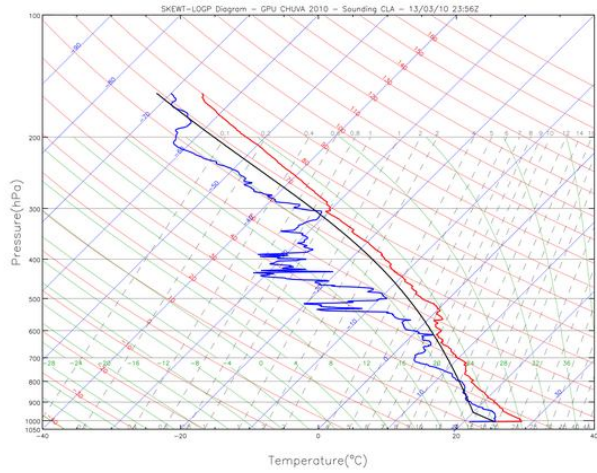


Figure 7 – Conclusion.