

Weather Report (2010/03/12)

In March 12th, the observations made at Meteorological Facilities of CLA showed more clouds than previous days above Alcântara. In the end of day the sky was totally covered. Several kinds of clouds were observed during this day, but the stratocumulus and cumulus presented the most frequency. The stratocumulus presented base height of approximately 450 m. The wind direction was predominantly from North (Fig. 1). In this same figure, it shows that the afternoon was the part of the day that presented the greatest wind speed values, and during the morning the wind was near to zero, except at 2 UTC. 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 9 °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 the highest values than in the previous days, mainly at 11 UTC. The sea level pressure variation is shown in Fig. 3.

Heavy rain was observed in the end of the day at approximately 23 UTC. This precipitation occurred mainly in radar and inpe sites. The rain gauges did not measure any precipitation. The upper level cyclonic vortex changed the circulation above experiment area. This movements caused apparition the some rain system in end of the day. The CLA RADAR also registered the 23:18 UTC precipitation (Fig. 4). The RHI echoes shows that the precipitating cloud top to reached to a height of 4 km. The thermodynamical conditions at São Luis airport station can be seen at Figure 5. The atmosphere presented great values of instability, approximately 2385 J/kg. The Skew T – log P diagram obtained by the radiosondes at the Meteorological Facilities of CLA can be seen at Fig. 6.

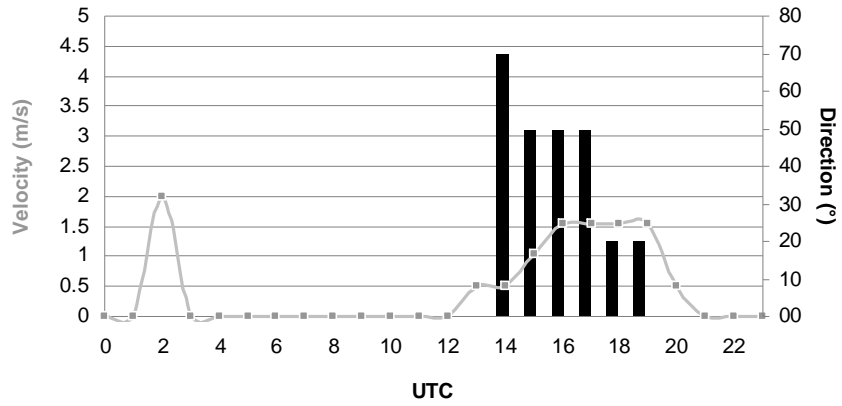


Figure 1 – Hourly wind direction and velocity for 2010/03/12.

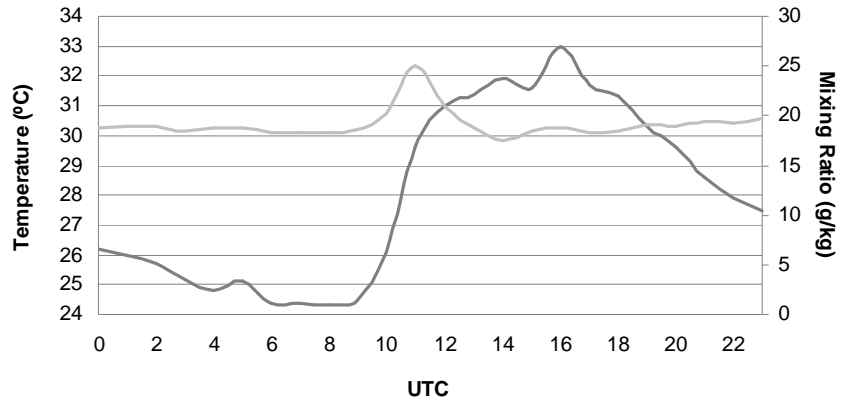


Figure 2 – Hourly temperature (black) and mixing ratio (gray) for 2010/03/12.

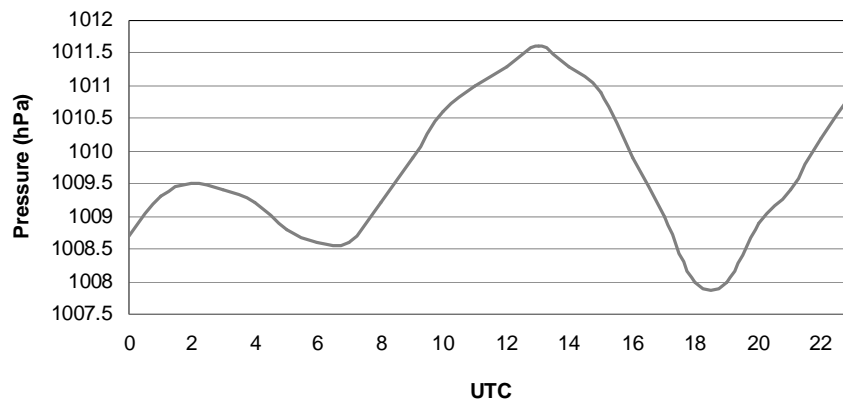


Figure 3 – Hourly sea level pressure for 2010/03/12.

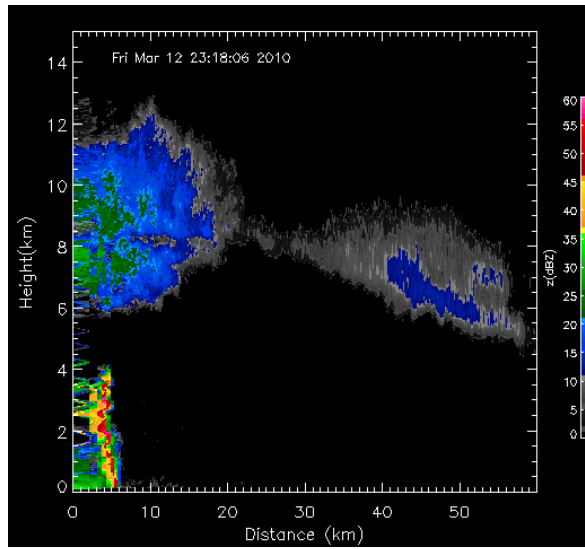


Figure 4 – RHI at 141.2 ° azimuth from CLA RADAR.

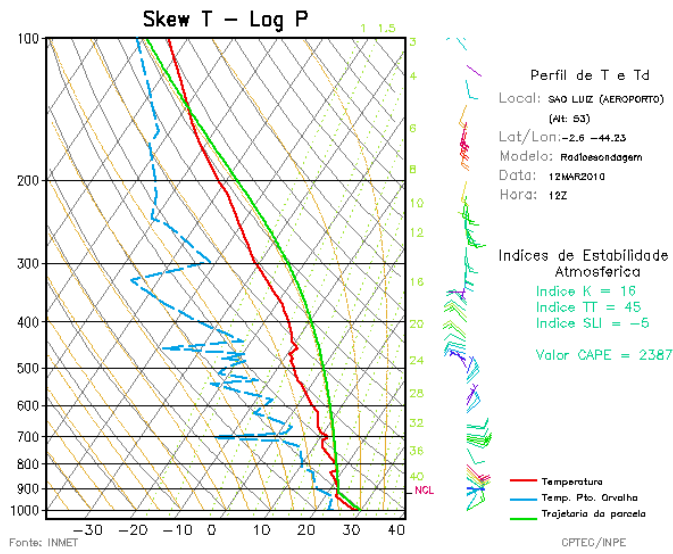


Figure 5 – SkewT LogP diagrams in São Luis airport (Near to Alcântara).

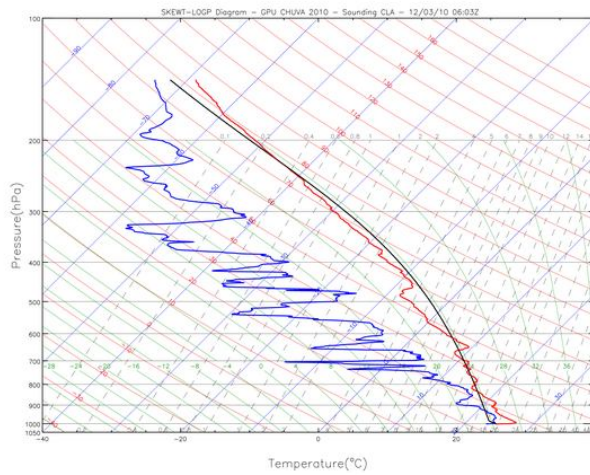


Figure 6 – Sequence of SkewT LogP diagrams. Continue.

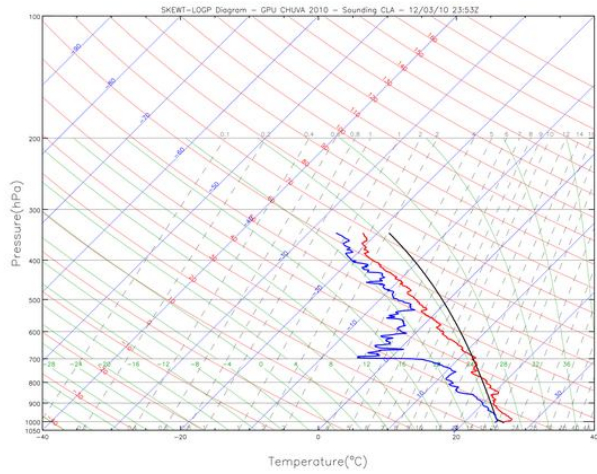
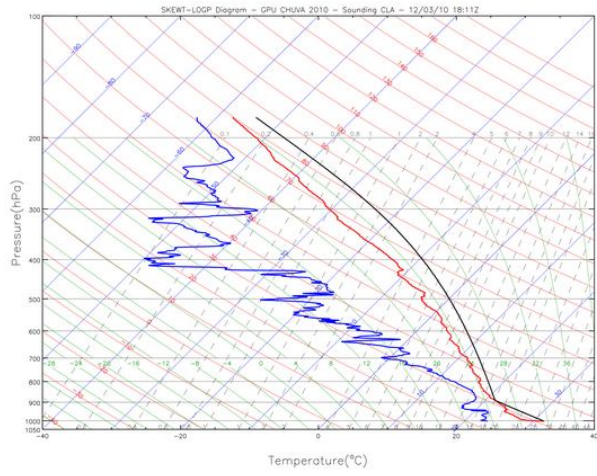
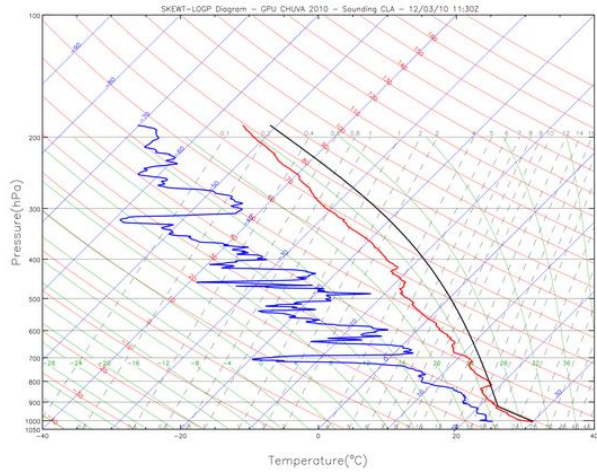


Figure 6 – Conclusion.