

## **Weather Report (2010/03/16)**

In March 16<sup>th</sup>, the observations made at Meteorological Facilities of CLA showed several kinds of clouds above Alcântara. During day the sky was partially covered. Four types of clouds were observed during this day: cumulus (600 m, base height), cirrus (9000 m, base height), stratus cumulus (480 m, base height) and Altucumulus (3000 m, base height). But cumulus presented the most frequency. The Fig. 1 showed that whole day presented the greats wind speed values with predominant direction of Northeast. Hourly variations of the air temperature and mixing ratio are presented in Fig. 2. A regular distribution was observed for air temperature, just computing 2 °C difference between the maximum and minimum values, with minimum along the morning and maximum in the afternoon. It can be noted in Fig. 2 that the mixing ratio showed greats variability during the day. But it showed great values between 12 and 18 UTC. The sea level pressure variation is shown in Fig. 3.

Light and local heavy rain was observed. This precipitation occurred mainly in INPE site. Rain gauges and disdometers registered rainfall. The maximum amount observed was 6.88 mm of precipitation. The upper level cyclonic vortex has weakened, but influence in the circulation above experiment area yet. Several rain systems caused precipitation in adjacent areas. The CLA RADAR also registered the precipitation at 14:24 UTC (Fig. 4). The RHI echoes shows that the precipitating cloud top to reached to a height of 6 km with few minutes of duration. The thermodynamical conditions at São Luis airport station can be seen at Fig. 5. The atmosphere presented great value of instability, approximately 2980 J/kg. The Skew T – log P diagram obtained by the radiosondes at the Meteorological Facilities of CLA can be seen at Fig. 6.

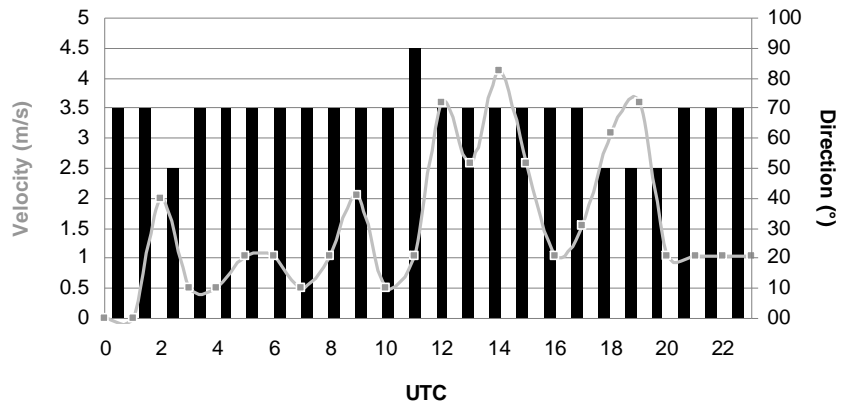


Figure 1 – Hourly wind direction and velocity for 2010/03/16.

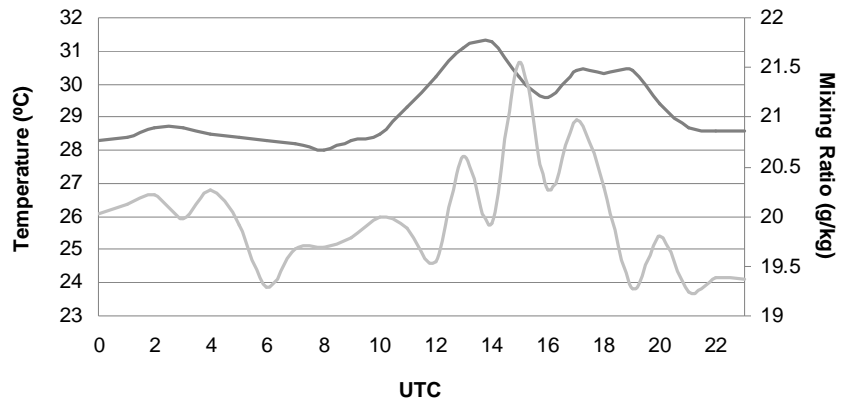


Figure 2 – Hourly temperature (black) and mixing ratio (gray) for 2010/03/16.

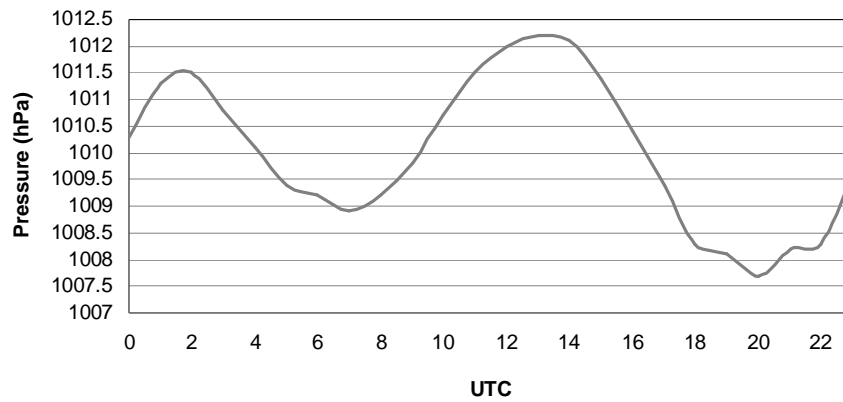


Figure 3 – Hourly sea level pressure for 2010/03/16.

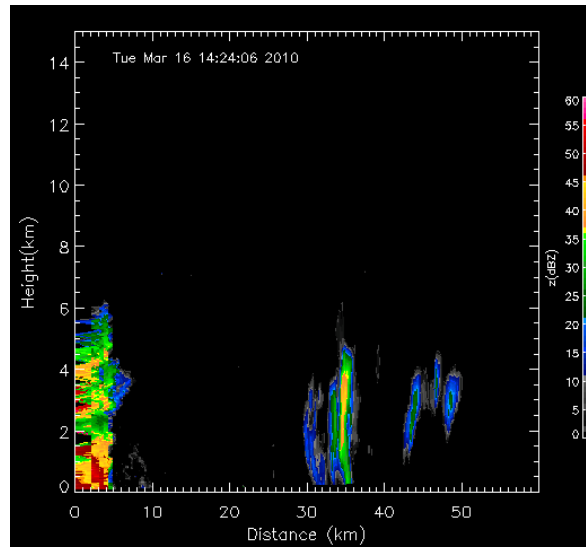


Figure 4 – RHI at 141.2 ° azimuth from CLA RADAR.

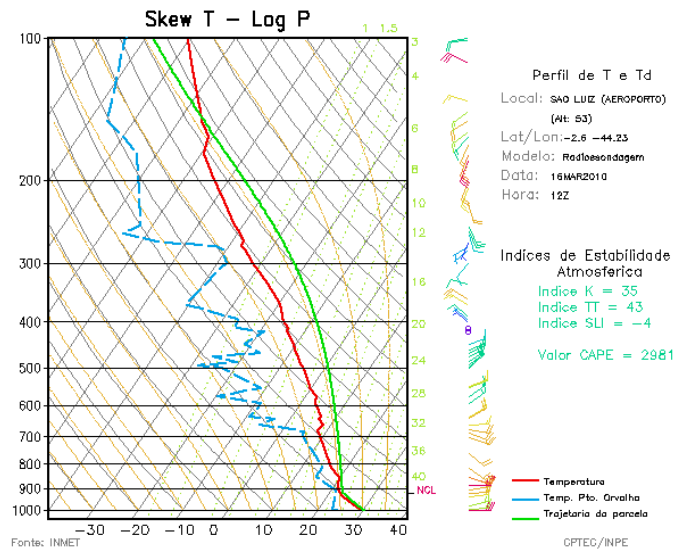


Figure 5 – SkewT LogP diagrams in São Luis airport (Near to Alcântara).

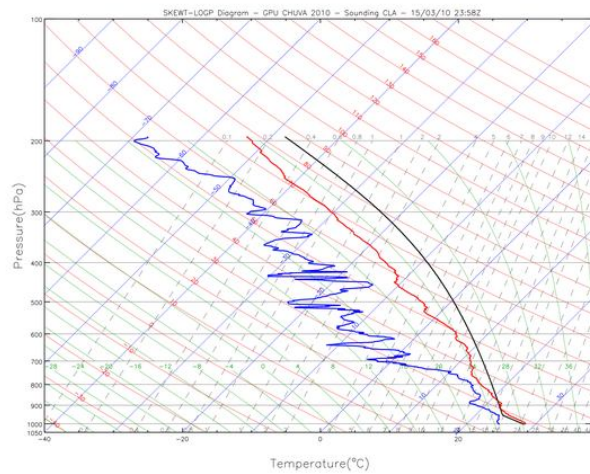


Figure 6 – Sequence of SkewT LogP diagrams. Continue.

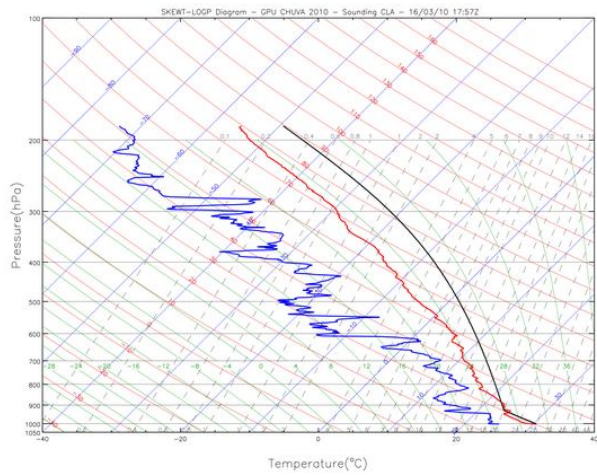
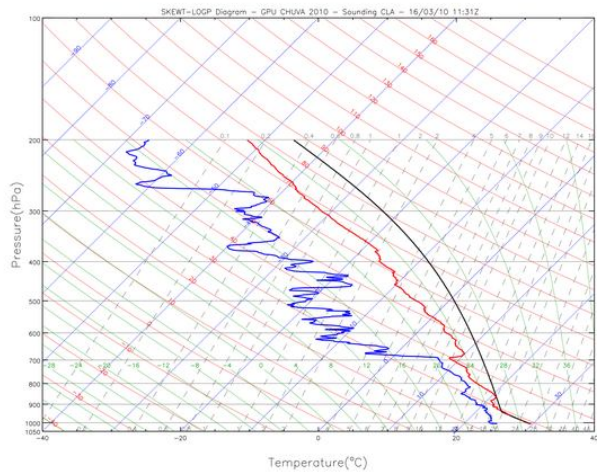
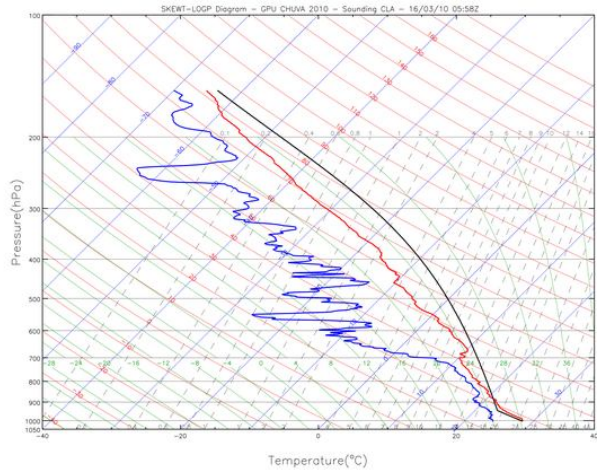


Figure 6 – Conclusion.