

Characteristics of Cirrus Clouds in the Central Amazon region during one week in September 2011

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Abstract: Cirrus clouds are an important component of the climatic system and the lidar technique is very useful for their study. In the present work, data from a lidar instrument installed in a site in the Central Amazon Region (2.89 °S 59.97 °W), near Manaus City, was used for the characterization of this type of cloud during an intensive campaign that took place between 30th August and 7th September 2011. Mean geometrical characteristics (Base, Top and maximum backscattering heights) of the cirrus detected during this period were 11.5 km, 13.4 km and 12.8 km, respectively. The corresponding maximum/minimum values were 17.9 km/6.0 km, 19.5 km/6.5 km and 19.2 km/6.4 km, respectively. Up to 3 cirrus clouds layers were detected during almost the whole period. Cirrus clouds frequency of occurrence was of 60 % in overall period. The lowest cirrus cloud frequency occurrence was 3 % and 15 % for the days August 30 and 31. Mean value of cloud optical depth (COD) was 0.19. Cirrus clouds were classified in subvisual, thin and opaque clouds with COD/frequency mean values of 0.01/13 %, 0.13/65, 0.48/22 %, respectively. Comparison with COD from CALIOP was conducted with few coincident measurements.

- **Keywords:** cirrus clouds; lidar; Central Amazon Region.
- **WLMLA Area:** Lidar applications in environmental sciences .
- **Presentation:** Oral Presentation (Oral or Poster presentation).