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Cirrus cloud case study in the winter over Sao Paulo city using lidar

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A recently proposed methodology to obtain the macro-physical (top/base heights with respective temperatures and thickness) and optical properties (Lidar Ratio (LR) and optical depth (τ_{cir})) of cirrus cloud have been tested from the lidar data measured at São Paulo city, Brazil (23° 33' S, 46° 44' W) during the winter period of 2007. At the same time was investigated a generating mechanisms responsible for cirrus cloud formation in the region of this study. Synoptic cirrus such as those formed in connection with jet streams, and frontal and low-pressure systems, were a common feature of our clouds. The retrieved lidar data show optical depth and lidar ratio ranging respectively from $\tau_{\text{cir}} = 0.08 \pm 0.02$ to $\tau_{\text{cir}} = 0.56 \pm 0.01$ and LR = 19 to LR = 74.

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