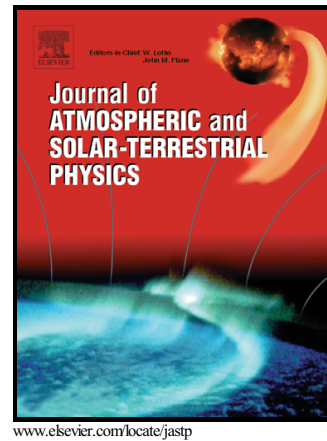


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## Lidar observations of Cirrus Clouds in Buenos Aires

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## Abstract

Characterization of cirrus clouds over Buenos Aires (34.6°S, 58.5°W) using a ground based lidar is presented. The study, carried out for the period 2010-2011, reveals that cirrus are usually found in the altitude region 8 to 11 km, with mid-cloud temperatures values varying between -75°C to 55°C. The clouds, whose bases altitudes display significant variability while their tops remains close to the tropopause, show geometrical thickness ranging from 1.2 to 5 km, with on average value  $3.0 \pm 0.9$  km. Most commonly observed cirri can be characterized as optically thin cirrus rather than dense ones, with a mean optical depth value of  $0.26 \pm 0.11$  and an applied multiple scattering factor  $\eta$  of  $0.85 \pm 0.07$ . In this region, the optical depth increases with increasing geometrical thickness with a partially linear correlation. Lidar ratios are also analyzed and on average the value is  $32 \pm 17$  sr.

Key words: lidar measurements, cirrus clouds, optical depth, lidar ratio

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