



Cirrus Cloud Characteristics at the Southern-Hemispheric Midlatitude Site of Punta Arenas (53°S, 71°W)

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[03].[Atmospheric aerosol and clouds properties]

[27-June], [14:15]

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Punta Arenas Site (PTA)

53.13° S, 70.88° W, 10 m asl



Multi-wavelength raman depolarization lidar:



- Elastic Channels: **1064, 532, and 355 nm.**
- Raman Channels: **384 nm, 408 nm and 607 nm.**
- Polarization s/p (**532 nm and 355 nm**)
- Temporal Resolution: 3 minutes every 15 minutes on a 24 h / day basis.

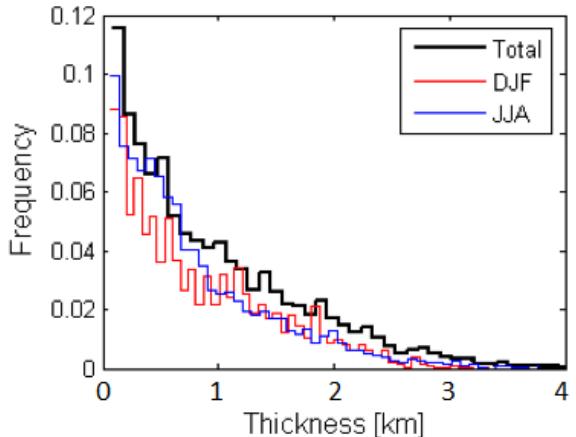
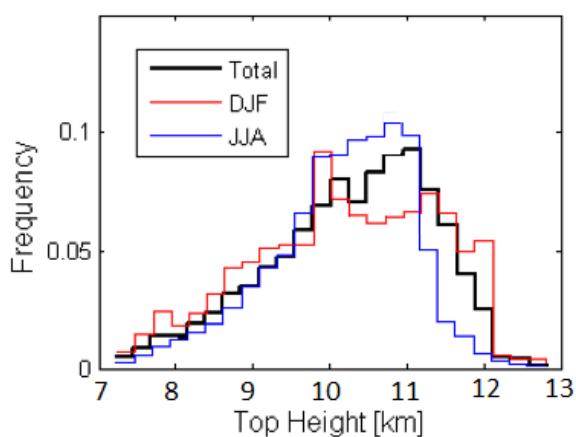
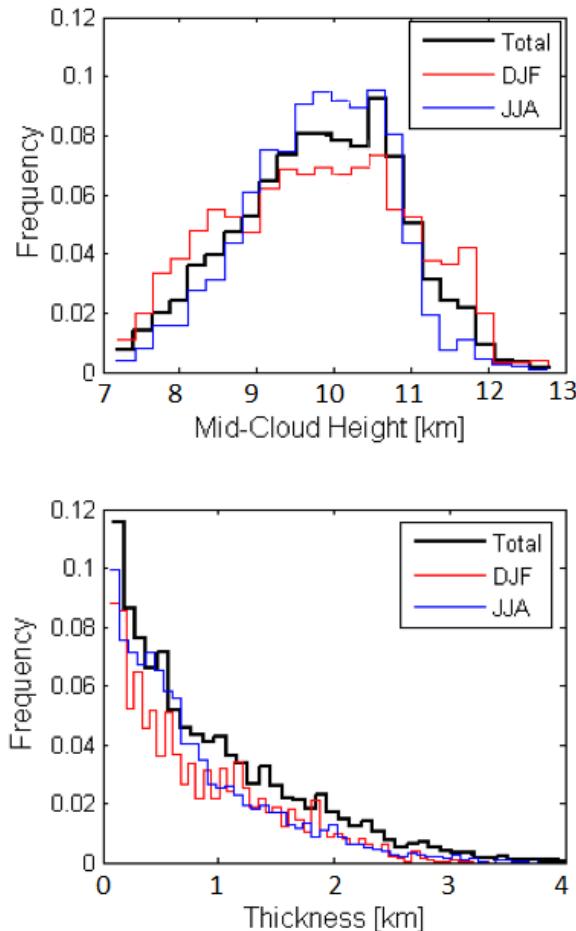
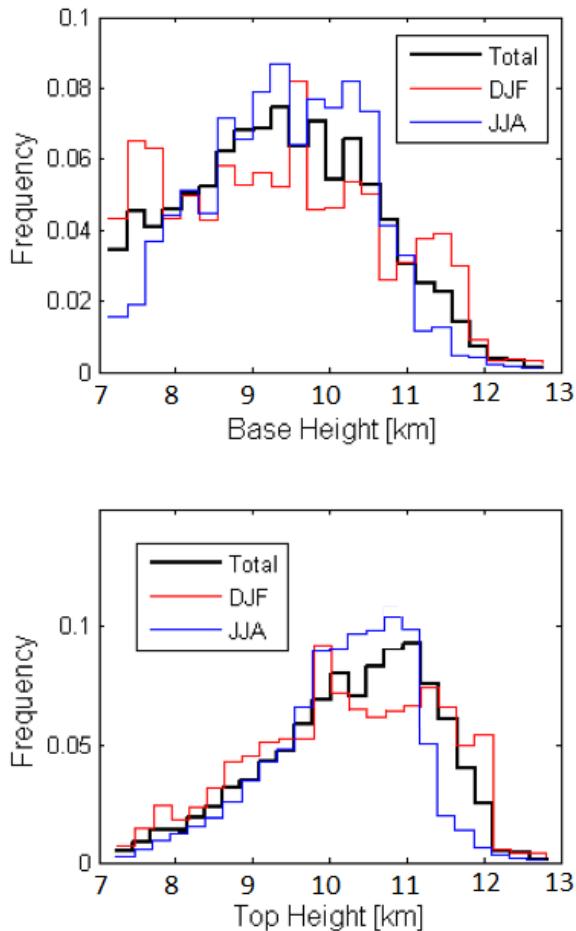


Lidar signal are processed with the method reported by Gouveia et al. [1]. The method used only the lidar elastic backscattering signal at 532 nm, also the depolarization of the lidar signal, considering multiple scattering. Information from the JAXA EarthCARE Research A-train Product Monitor [2] was used to evaluate the behavior of cirrus clouds from another source of information.

For the analysis of cirrus clouds case we used information and images produced with measurements from Punta Arenas lidar and the pollyXT.

Geometrical Characteristics 2016- 2020.

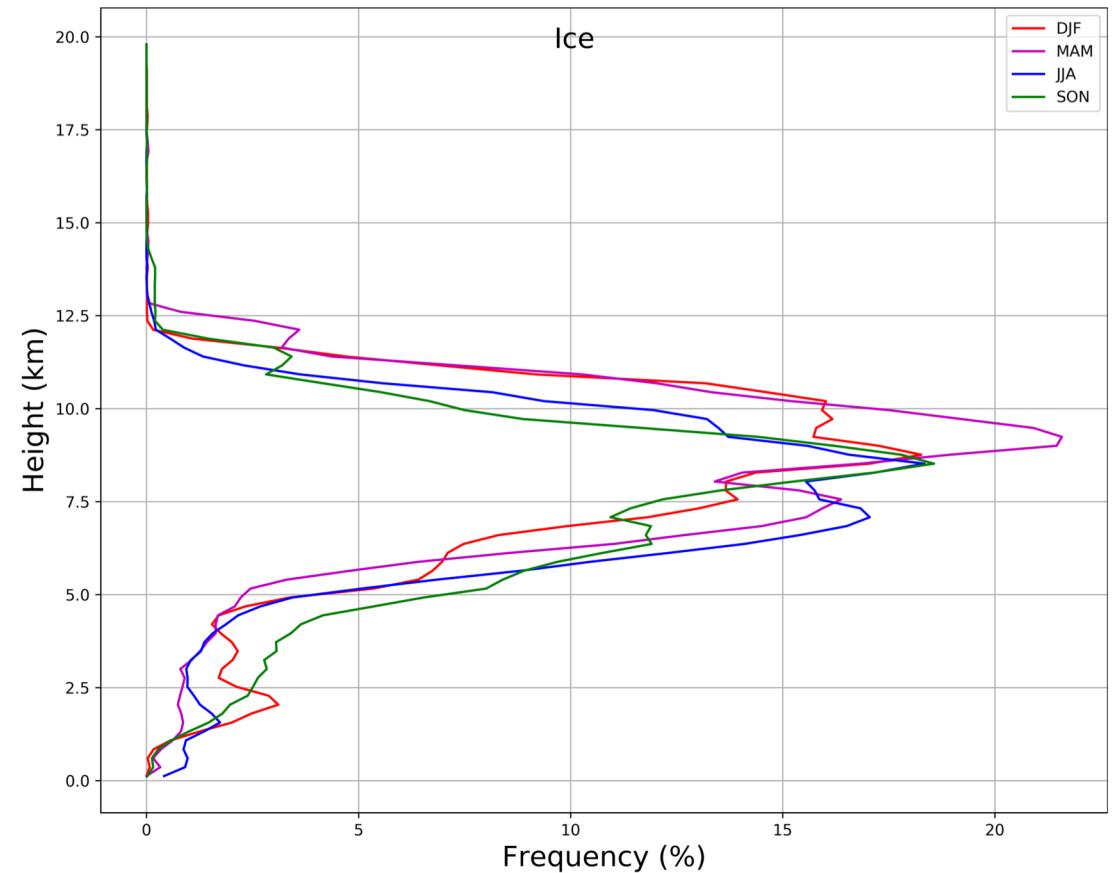
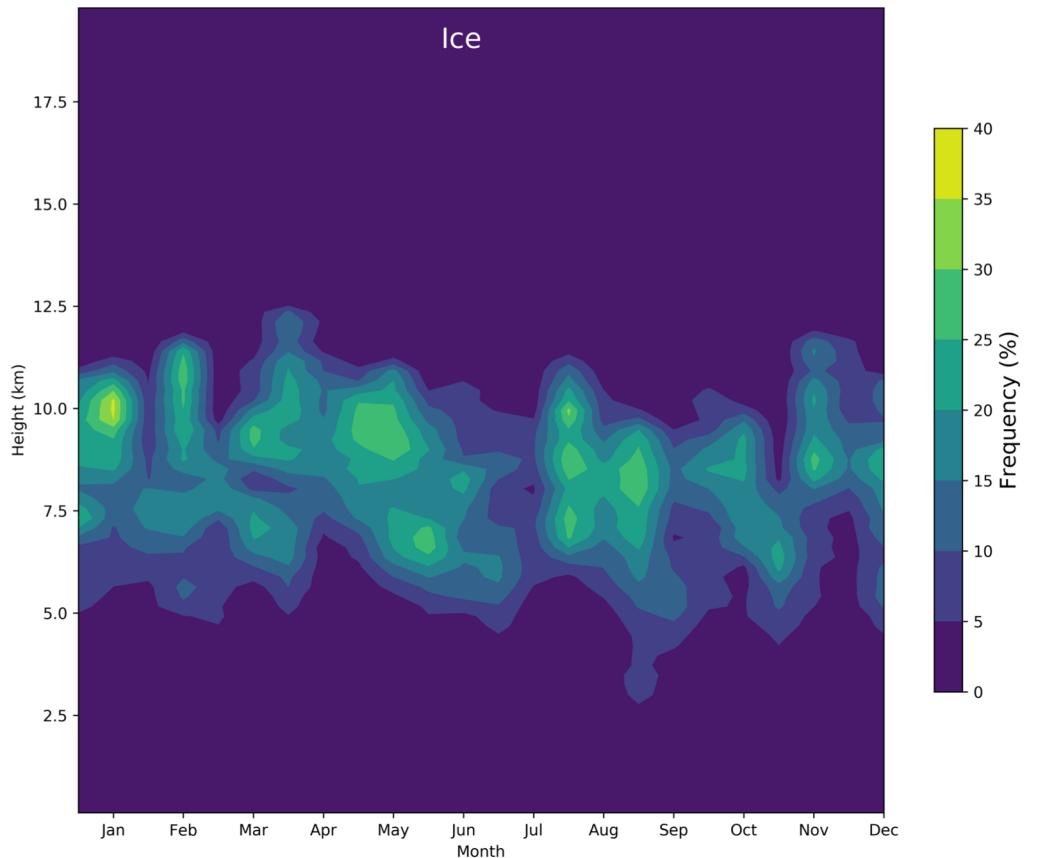
Punta Arenas Lidar



	Total	DJF	MAM	JJA	SON
Occurrence [%]	58.0	57.6	64.8	52.7	58.7
Base [km]	9.1	8.7	8.9	9.1	9.2
Top [km]	10.8	10.1	10.8	9.7	9.9
Thickness [km]	1.88	2.00	1.97	1.74	1.90

The frequency of occurrence show higher presence of cirrus clouds during autumn season (MAM).

Frequency of occurrence profile of ice in Punta Arenas during the period of 2006 to 2014. From radar/lidar clouds microphysics

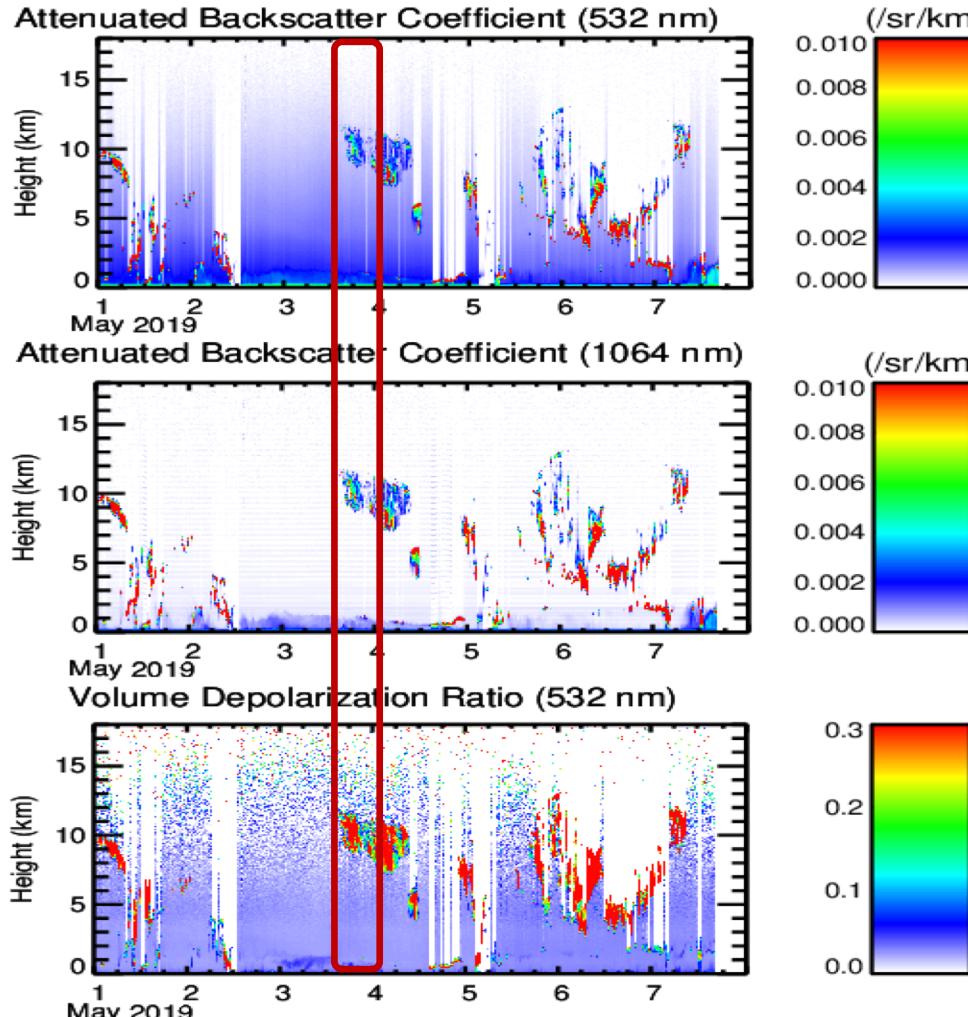


There is a consistency between the results from four years of lidar observation and nine years of satellite product.

Abstract:

Comparison of the PollyXT and Punta Arenas lidar measurements of cirrus clouds during May 3rd 2019, between 15:30 and 23:59 UTC.

Punta Arenas Lidar



PollyXT

