**The cloud classification**

Chao TANG1 ✉, Béatrice MOREL1, Nathalie PHILIPPON2, Thierry PORTAFAIX3, Miloud BESSAFI1,

✉ Chao TANG

Email: [chao.tang@univ-reunion.fr](mailto:chao.tang@univ-reunion.fr)

1. Laboratoire d'Energétique, d'Electronique et Procédés, ENERGY-lab, Université de La Réunion, La Réunion, France

2 CRC, UMR6282 Biogéosciences CNRS-UBFC, bât. Sciences Gabriel, 6 blvd Gabriel, 21000 Dijon, France

3 LACy (Laboratoire de l'Atmosphère et des Cyclones), UMR8105, CNRS – Université de la Réunion – Météo-France, Saint Denis de la Réunion, France

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# Abstract

Keywords: South West Indian Ocean, cloud cover,

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# Introduction

Previous studies:

Cloud Type product issued from retrievals of the Spinning Enhanced Visible and InfraRed Imager onboard MeteoSat Second Generation (MSG-SEVIRI) offers a classification of clouds at 3 km spatial resolution and 15 min time resolution over the period 2010–2014. This cloud type classification was used for a diurnal and seasonal analysis to exam its role on the annual forests greenness in central Africa (between 0 and 5°N and 12–19°E). In this study [Philippon et al. (2016)](#_ENREF_6) redefined 7 cloud type according to cloud altitude and their optical properties; then

The climatological distribution of low-cloud fraction (LCF) over south Indian Ocean and its seasonality is presented by using satellite data, and lined to the storm-track activity and subtropical high. ([Miyamoto et al., 2018](#_ENREF_5)).

[Li et al. (2014)](#_ENREF_4) have shown some evidence of linkage between the cloud vertical structure and large-scale climate by exploring large-scale atmospheric dynamics, meteorological processes, and tropospheric cloudiness.

Using the DARDAR mask product based on Cloud–Aerosol Lidar and Infrared Pathfinder Satellite Observation (CALIPSO) and CloudSat measurements (between 2007 and 2010), the characterization of the spatial, seasonal and vertical variability of clouds over the whole southwest Indian Ocean is investigated in the latitudinal band between 10 and 30◦S ([Vérèmes et al., 2019](#_ENREF_7)).

In the southwest Indian Ocean, vertical distribution of tropical clouds and their temporal variability of at the diurnal and seasonal scales are investigated in the northern part of Reunion Island (55.5°E; 21.1°S) using data from a 95 GHz cloud radar during 2016–2018 ([Durand et al., 2021](#_ENREF_2)).

[Kahn et al., 2008](#_ENREF_3)

[Chen et al., 2000](#_ENREF_1)

This paper is organized as follows: Section 2 presents the data used in this study and the methods to XXX. The results are shown in section 3. Then conclusions are made in section 4 followed by a brief discussion.

# Data and Methods

## SAFNWC/GEO /GEO cloud type product

Reference of this data (to confirmed):

<https://www.nwcsaf.org/web/guest/scientificdocumentation#NWC/GEO%20v2018>

# cloud variability and

monthly and diurnal:

Chart, bar chart

Description automatically generatedChart, histogram

Description automatically generated

Fig. 1 examples of monthly and diurnal cloud type, from [Philippon et al. (2016)](#_ENREF_6" \o "Philippon, 2016 #60).

## SSR classification

Coming soon…

### SSR climatology over Reunion

# Discussion and Conclusion

Summary:

climate change impacts:

Perspective:

This study focusses on the SSR variability due to climate variabilities, where the analysis is at regional scale, over Reunion area. However, more detailed variation at local scale is still missing. Uniformly distributed anomalous SSR (see the classification of SSR anomaly in section 3.1) implies an investigating at smaller scales, such as the cloud process and topography lifting, etc, which is a perspective of this study.

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# Appendix

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