

General comments:

The paper by Normand et al. is a short study on how to use OSIRIS limb measurements for detecting clouds. As the wavelength range of the instrument is limited towards the near infrared, using a statistical method and the forward model SASKTRAN is a good workaround to methods using the physical properties of clouds (Rayleigh vs. Mie-scattering). The occurrence frequencies in the tropical regions compared to CALIPSO and SAGE II give promising results.

The detection of clouds from limb scattered radiation is an interesting topic within the scope of atmospheric measurement techniques. Thus I recommend the article to be published after the following comments are addressed.

Specific comments:

- How is the local tropopause height calculated? There is no explanation and reference in the paper.
- Fig.1b: Where is the cloud top in that example?
- Chapter 4.3: PDFs are calculated on a monthly basis. Then why not showing an example in Fig.2? Also in Fig.3 4-month averages are shown
- Fig. 5: Tropopause heights can be as low as 7 km in the polar regions, which is the lowermost tangent height of the instrument (as said in the paper). Does this affect the detection of polar clouds? Why altitudes below 7km are then plotted in figure 5b?
- Fig. 6: Why the occurrence frequency above about 17 km is not close to zero? Is that the influence of aerosols?
- Fig. 7: The patterns in the tropical regions are similar from year to year. But in the extratropical regions (roughly $\pm 40^\circ$), there is a year to year variance. Is this explainable or is the method not that reliable there? Over Greenland the cloud frequency drops from about 50% to 10% within 4 years.

Technical Things:

Tables and Figures:

- Fig 1 and 3: the lines are too thin.
- Fig 1: Is this one measurement or an average May-August? May07-Aug07 is confusing as a title.
- Fig 2: The y-Axis title: is it the tangent altitude? I think it is something like TH-TP bins.
- Fig 3: What is ROI?