General comments:

This version of the paper investigating the link between the Saharan aerosol layer and cloudiness using lidar measurements and dropsondes data of four NARVAL flights has been much improved by the authors. The analysis has been extended by looking into vertical profiles of potential temperature, humidity, wind, etc. from dropsondes, checking conditions during NARVAL I and discussing findings with what has been found by others. In particular I welcome the analysis around the reason why the presence of SAL is correlated well with the occurrence of clouds and their macro-physical properties. It has been found that many meteorological properties between dusty and non-dusty times are quite similar with the exception of the relative humidity inside SAL or for example the number of inversions present. It has been highlighted that more work needs to be done to fully understand if those differences in cloudiness are a consequence of radiative effects by the dust, by dust settlement or by changes in the general circulation patterns. I recommend this paper for publications after some final minor editing.

Specific comments:

The main body of the manuscript has been much improved. However, the abstract does not reflect this nice work. I would like to see more findings presented instead of introduction. Additionally, I think that the abstract has to be a bit more concise regarding the effect of dust. There are two effects dust can have; either directly or indirectly by modifying the cloud properties or the air properties associated with the dust layer (SAL) can suppress cloud formation (not the dust per se). Those are two different things and need to be articulate better, especially because the abstract begins talking about direct and indirect effects of aerosol but finishes with the effect of SAL. In the summary that has been done much better by discussing that the real reason behind the correlation of SAL and cloud properties is still open for research.

P2, l6: Dust is known to be not a good CCN! Only when it accumulates soluble material through internal mixing it can act as CCN. Please add this information. It is a good IN though.

Technical comments:

P5, l11: Change “RF5 and 7 are excluded as well since cirrus fields covered most of the research area during RF5 and RF7 ’s objective was to cross the Inter Tropical Convergence Zone (ITCZ) for several times.” to “RF5 and RF7 are also excluded because cirrus fields covered most of the research area during RF5 and the objective of RF7 was to cross the Inter Tropical Convergence Zone (ITCZ) for several times.”.

P5,l14: Please do not use “))”.

P5,l15: Change “Altogether a 22 h -lidar data set measured in the dust-free trades, a 16 h -lidar data set measured in SAL trade wind regions and a 44 h -data set obtained in winter season is used to study differences in macro-physical cloud properties between the respective regions and seasons.” To “In summary, 38 hours of measurements during the

summer season (22 hours of lidar measurements during dust-free times, 16 hours of lidar measurements with SAL present) and 44 hours of measurements during the winter season are used to study differences in macro-physical cloud properties between the dust and non-dusty times and different seasons.”.

P5,l33: Add “, respectively” in the end.

P11,l23/24: Remove “so-called” and change to “a” and change “from ocean surface to 0.5 to 0.7km and the cloud ” to “from the ocean surface to 0.5 - 0.7km and a cloud”.

P17,l11/11: Change “It can be summarized that dust-laden regions implicate less, shallower and smaller clouds than dust-free regions.” to “It can be summarized that during SAL less, shallower and smaller clouds are present than during times without SAL.”.