We thank the reviewer for the time spent in the revision of this manuscript.

The authors have adressed most comments raised by the reviewers.
There are some remaining issues that should be fixed/clarified before publication:

- Background Caribic:
In their reply to reviewer 1, the authors state that "We think this comparison with other measurements in Europe is sufficient to rely on the NO mixing ratio provided by CARIBIC."
I don't see this statement supported by the data presented. It is still a single mixing ratio measured on one day, used to construct a full tropospheric column. Thus it has a quite large uncertainty. The authors should state that clearly in the revised manuscript.

In addition, in reply to reviewer 1 the authors state that the background column derived from CARIBIC differs for KNMI and DLR due to different assumptions made. This important information is missing in the manuscript.

Measurements in convective systems are usually done during flight campaigns. In this case, there are no data for chemical measurements in the studied area apart from the measurements provided by CARIBIC. In addition, the measured mixing ratio of NO was in agreement with previous airborne NO measurements over convective systems without lightning in Europe during the EULINOX campaign. We have added more details in the manuscript.

In replies to reviewer 1, we have stated that the LNO_x estimated from the CARIBIC-bakcground is different from that calculated from TROP-KNMI and TROP-DLR bakcground. The LNO_x from TROP-KNMI and TROP-DLR is calculated as the average within all the cases showed in Tables 1 and 2. However, the background- NO_x calculated from CARIBIC (0.75×10^{19} molec m^{-2}) is clearly within the range of the background-NO_x showed in Tables 1 and 2 (between negative values and 3.9×10^{19} molec m^{-2}).

- Lifetime:
In some papers, the lifetime of NOx in the upper troposphere is stated to be of the order of even several days (up to >10), e.g. Penner et al., JGR, 1998.
The authors choose a far shorter value of few hours. This is not comprehensible just from the range covered by literature values.
It only becomes comprehensible after reading Nault et al. who provide an updated estimate and state that previous values are biased high because they do not consider reactions that are significant for lightning NOx.
As this is important for the current study, the authors should expand the discussion of lifetimes and should shortly summarize the results from Nault et al. and explain, why the older (longer) lifetimes are probably biased high.

Done. We have added that the lifetime can vary between 2 h and several days according to the literature. We have explained the essential features of the new estimations reported by Nault et al. (2017).

- Missing orbit:
The reply that "Files in the database are missing, but the reason is not known." is quite unsatisfactory.
Since several Co-authors of this paper are involved in the algorithm development and data

processing for TROPOMI, I would like to see a more concrete reason what exactly is missing that causes a gap in the DLR product, while the KNMI product is available.

At the time that the specific TROPOMI NO2 and cloud data was provided by DLR and KNMI for the LNO_x study, the TROPOMI cloud data from DLR was not available for one orbit. This was due to a technical processing issue, which could unfortunately not be solved in time for the LNO_x study.