Reply to the additional comments of referee 2

Comments to the reply:

#2 Introduction
Please consider referring the following two papers on pollen monitoring with a fluorescence lidar, S.C. Richardson et al, Science of the Total Environment 696 (2019) 133906 and Y. Saito et al, Remote Sensing 10 (2018) 1533. These will help clarify the characteristics of your method/system.

Thank you. The mentioned paper references were added to clarify the use of fluorescence lidars to detect pollen.

#3 Two cases
I think it would be better to add such a description you replied. Readers wonder why only two short cases (2hours x 2days) were focused on in the study. You have made a great effort on the long time observation for 11 days.

An explanation was added, as:

In the choice of case studies, backward trajectories have been considered to select cases with minimal contamination with of other aerosol. Furthermore nighttime Raman measurements were chosen to present all lidar-derived parameters including the retrieved LR profile.

#5 Hirst-type volumetric air sampler
Is "the effect of depolarizing particles originating from the ground, can be considered negligible at the latitude the lidar data is used." correct? Various kinds of ground particles can be carried up to several kilometers where lidars can work well. I think some ones of them show a certain depolarizing. Does "Also if such depolarizing particles were frequently present, this would be visible in the PDR values of days without pollen." mean that your lidar only reacts to especially pollen? It is hard to think so.

We meant that if we would have a lot of depolarizing particles in the height of our observation, we would observe high depolarization ratios also during periods without pollen, because other particles sources from the ground are not linked to the pollination time. Measurements without pollen however show a relatively low PDR of around 4%.