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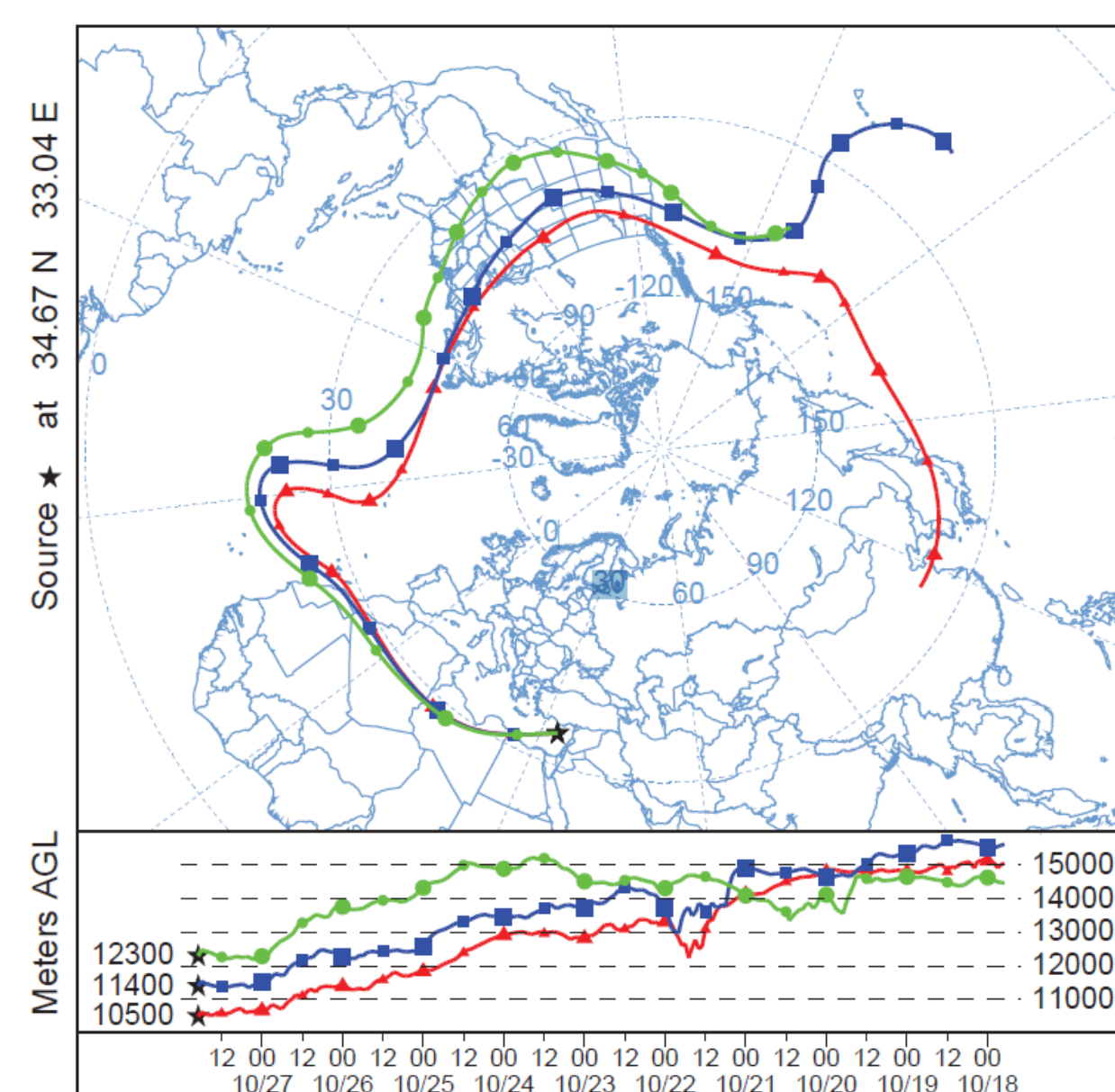
What is the role of aerosol to the cloud formation and evolution?

Cyprus is an ideal place for the study of the aerosol and cloud interaction and thus for the investigation of the role of the aerosols from different sources to the formation and the evolution of the clouds.

Our previous studies show that dust seems to be most uncoated and thus usually acts as a very effective ice nuclei particle INP.

More details can be found in the paper: *Ice-nucleating particle versus ice crystal number concentration in altocumulus and cirrus layers embedded in Saharan dust: a closure study*, *Atmos. Chem. Phys.*, 19, 15087–15115, <https://doi.org/10.5194/acp-19-15087-2019>, 2019.

In this study we present a new aerosol, smoke particles from wild fires.

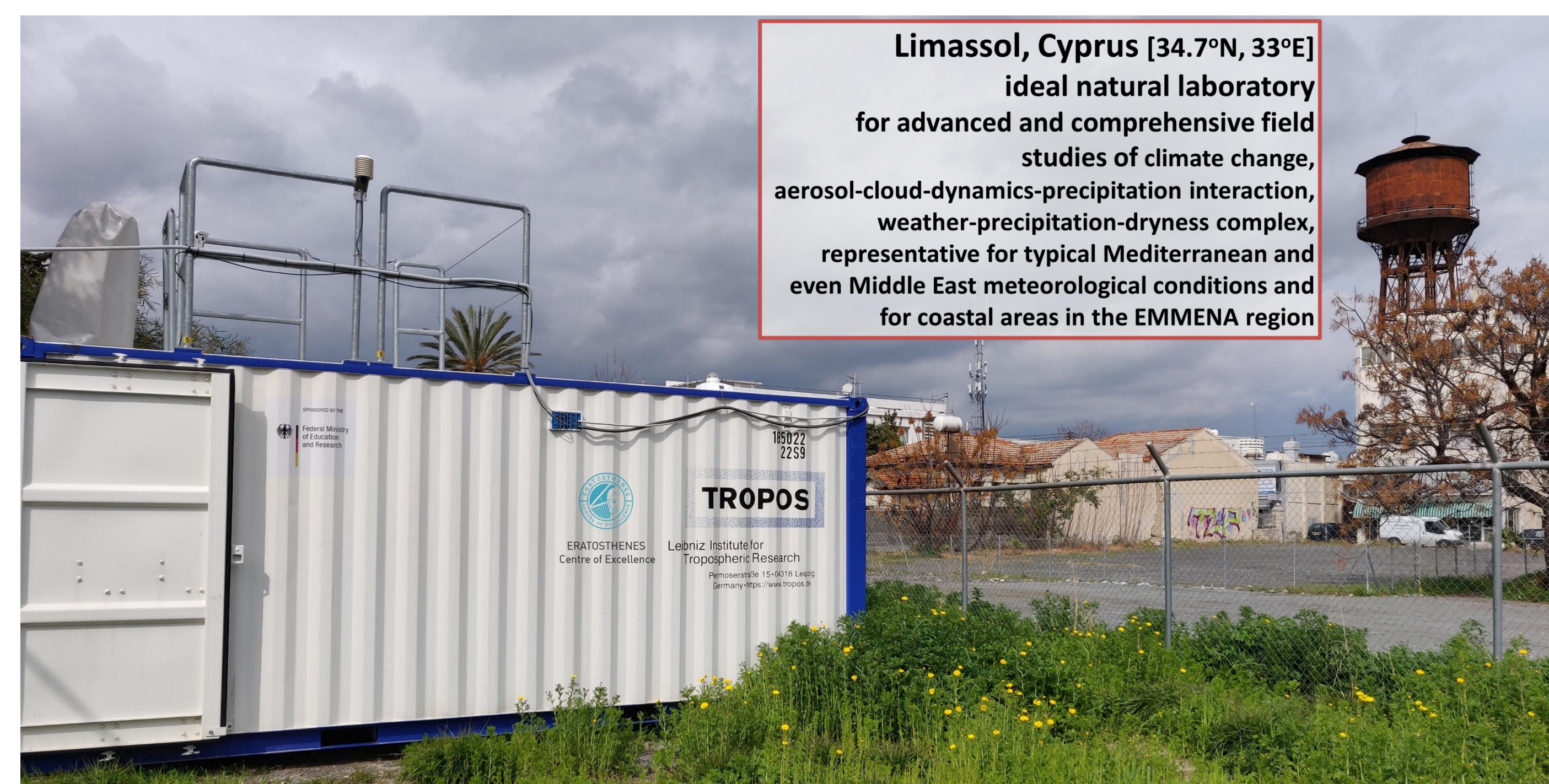


A wildfire smoke layer most probably originated from severe and long-lasting fires in California occurring in September and October 2020.

The PollyXT-CYP monitored a smoke layer in the upper troposphere from about 9–12 km height for a week from the beginning of the lidar observations in late October 2020 until early November 2020.

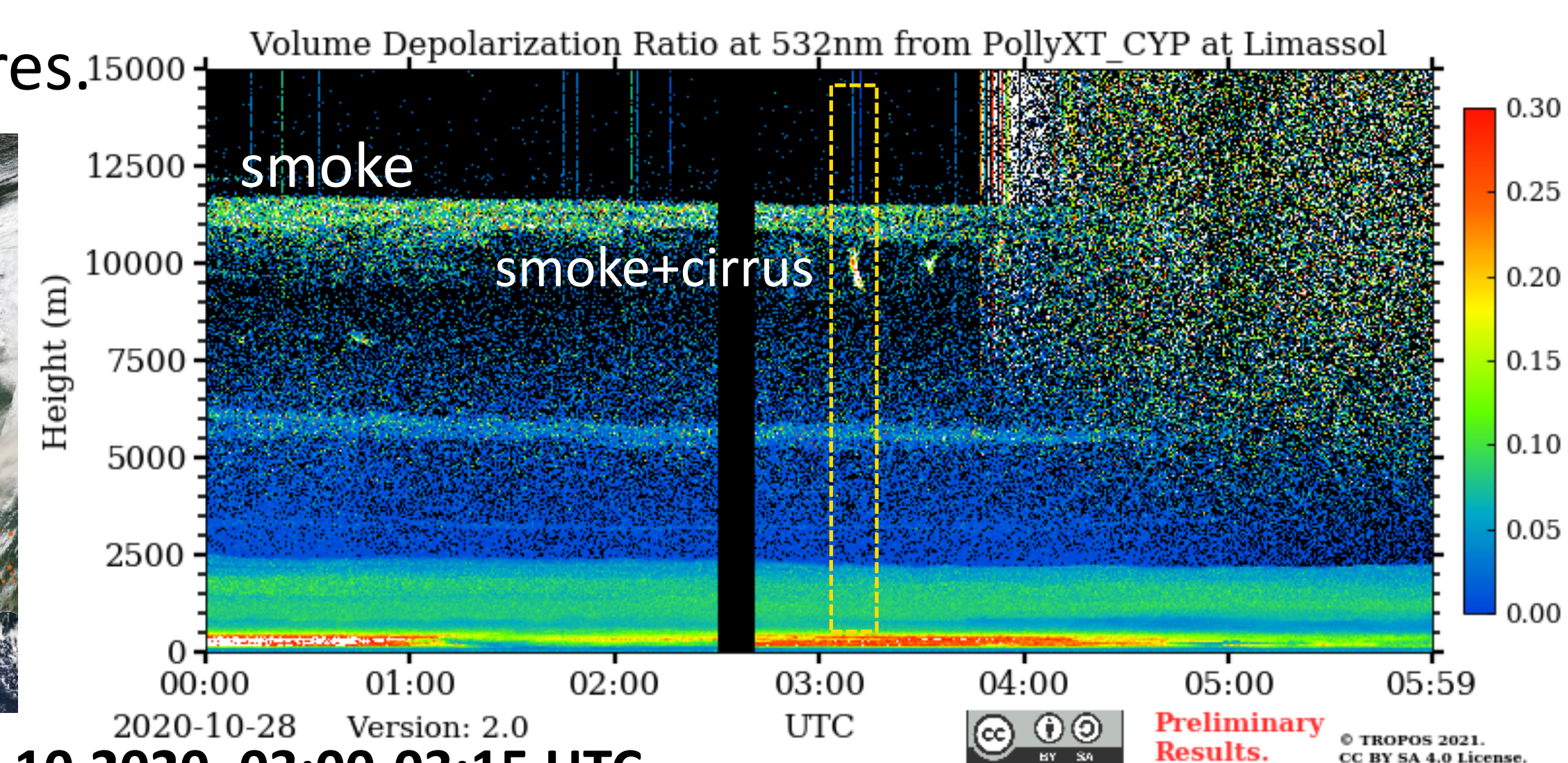
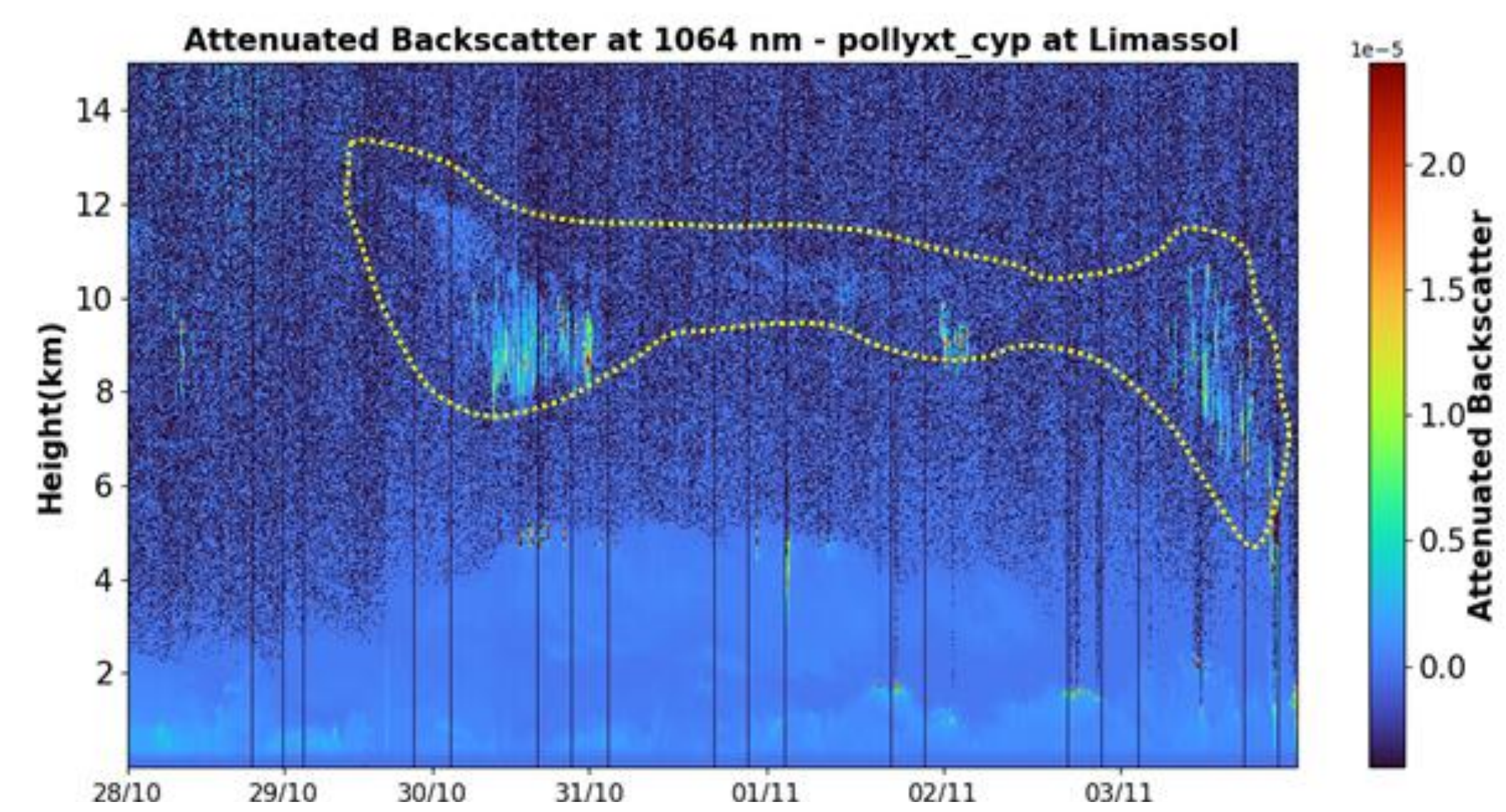
Because of the presence of cirrus clouds, occurring in the persistent smoke layer, a favorable opportunity presented itself to investigate, for the first time, the role of aged smoke particles (mainly consisting of organic material) in heterogeneous ice formation processes.

This effort can be regarded as a pilot study. For the first time, we can explore to what extent wildfire smoke (organic aerosol particles) can influence or even control cirrus formation.

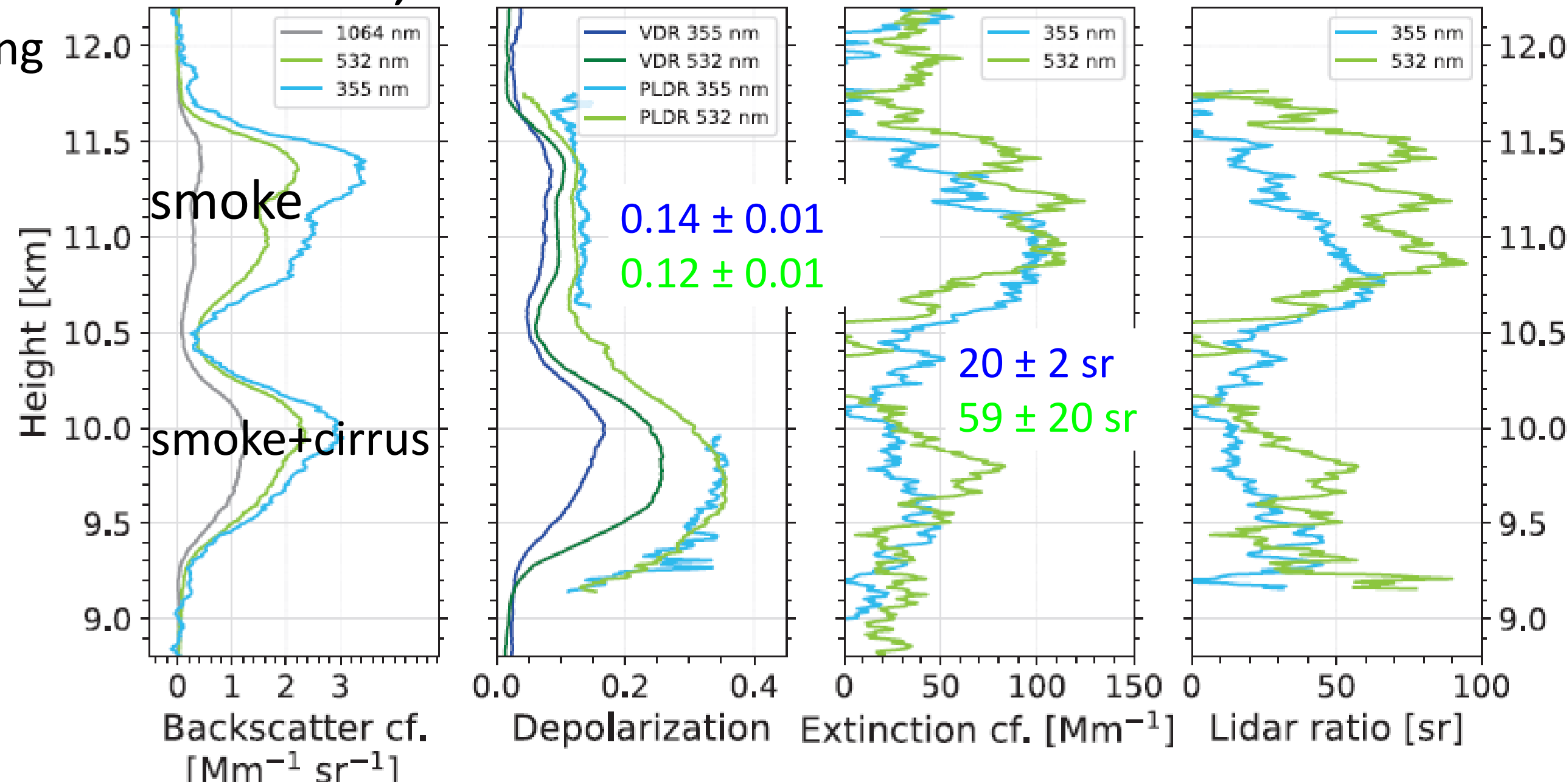


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28.10.2020, 03:00-03:15 UTC



- Ⓞ A new generation POLLY^{XT} lidar system start on 27th of October 2020, continuous operation, at Limassol, Cyprus.
- Ⓞ The POLLY^{XT}-CYP build by TROPOS, will be hosted by the ERATOSTHENES Centre of Excellence [ECoE] for its permanent operation aiming to link the ECoE to ACTRIS and POLLYNet.
- Ⓞ Its task will be to document the complex mixture of the different aerosol species and clouds over the Eastern Mediterranean.
- Ⓞ The POLLY^{XT}-CYP will be a key research infrastructure of the Cyprus Atmospheric Remote Sensing Observatory [CARO].
- Ⓞ The CARO of the ECoE is planned to become National Facility of the Republic of Cyprus for Aerosol and Cloud Remote Sensing Observations.