

'Comment on amt-2021-193', by Aristeidis Georgoulas, 04 Aug 202

Dear authors,

Congratulations on this comprehensive study. Such studies are useful in order to bring out the potential of using different observational datasets and modeling systems to better characterize episodic events over background areas.

I strongly urge you to enrich your reference list and link your study with previous studies in the area combining satellite, model, and observational data. Two such studies are:

Akritidis, D., Katragkou, E., Georgoulas, A. K., Zanis, P., Kartsios, S., Flemming, J., Inness, A., Douros, J., and Eskes, H.: A complex aerosol transport event over Europe during the 2017 Storm Ophelia in CAMS forecast systems: analysis and evaluation, *Atmos. Chem. Phys.*, 20, 13557–13578, <https://doi.org/10.5194/acp-20-13557-2020>, 2020.

Osborne, M., Malavelle, F. F., Adam, M., Buxmann, J., Sugier, J., Marengo, F., and Haywood, J.: Saharan dust and biomass burning aerosols during ex-hurricane Ophelia: observations from the new UK lidar and sun-photometer network, *Atmos. Chem. Phys.*, 19, 3557–3578, <https://doi.org/10.5194/acp-19-3557-2019>, 2019.

Specifically, the study from Akritidis et al. (2020) highlights the ability of CAMS to capture the complex aerosol transport event (dust and smoke) over central-western Europe during Storm Ophelia while the second study is mostly ground-based.

R: Thank you for pointing us to these interesting studies, which we included in the introduction.

Best regards,

Hengheng Zhang and all co-authors