SPAR@MEP
Objectives, Methods and highlights

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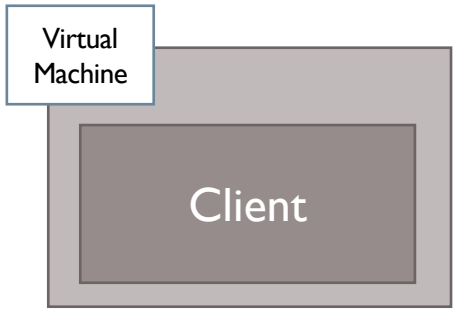
Report for the NoR project

RAYFERENCE

Project Introduction

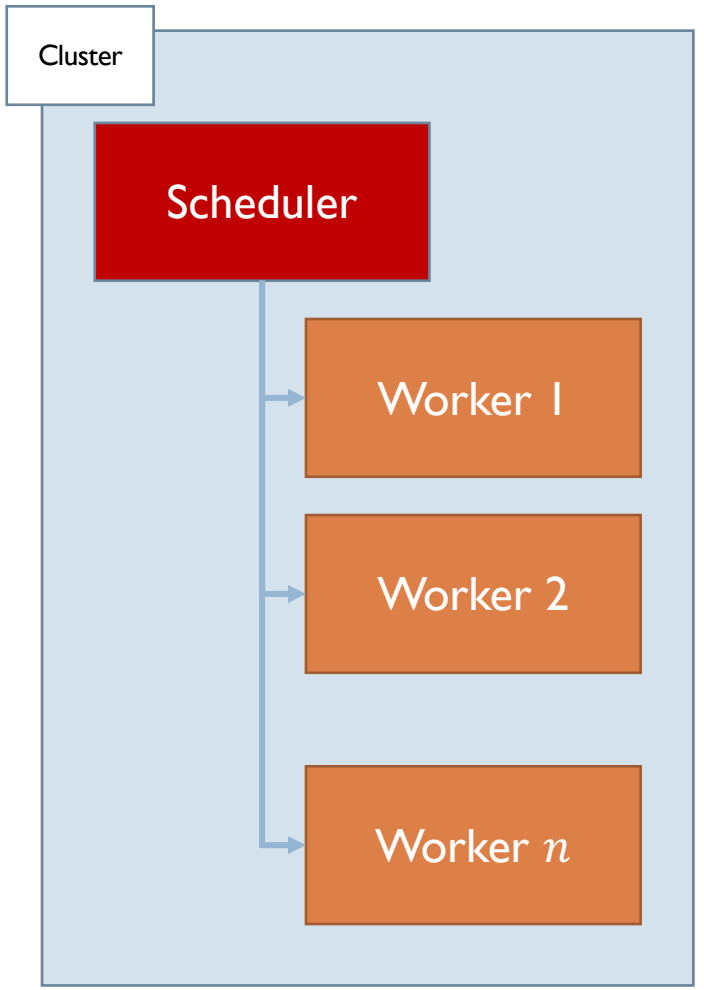
- The SPAR@MEP project aims at to deriving a consistent **SPOT-VEGETATION** and **PROBA-V** Aerosol and Surface Reflectance long-term data record in the PROBA-V Mission Exploitation Platform (**MEP**).
- The surface-aerosol product is obtained with the **CISAR** algorithm (*Luffarelli and Govaerts, 2019*).
- Several tasks have been performed:
  - SPOT-VGT/PROBA-V harmonisation
  - Full archive processing over key area
  - 1 year over Europe (2019) at 1 km resolution
  - 1 year global at 5 km resolution

Processing on the MEP environment

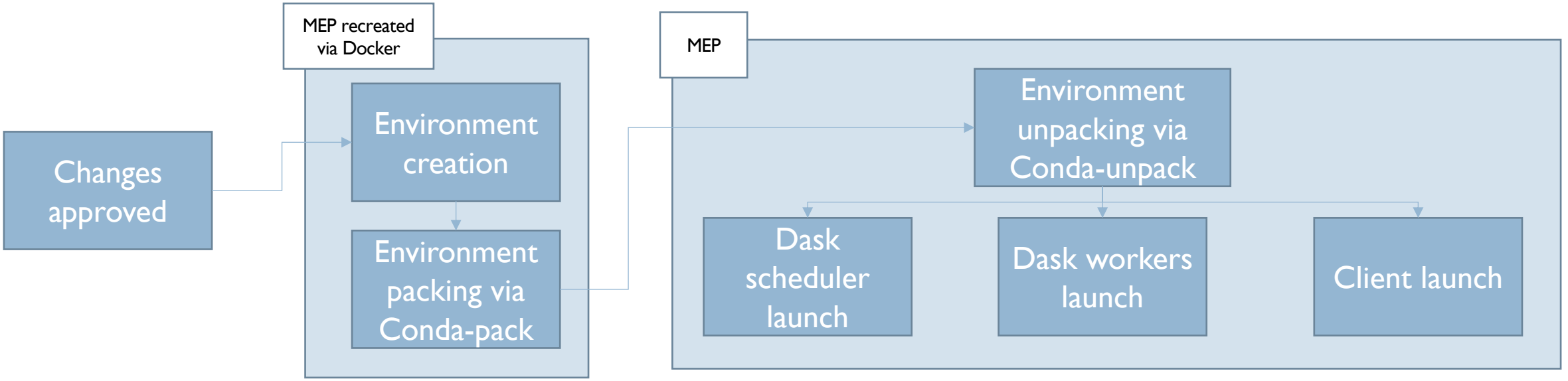


The MEP environment allowed direct access to the whole SPOT-VGT and PROBA archive.

It also provided a reliable processing environment where to install the CISAR algorithm and distribute the processing across several nodes through the dask scheduler.

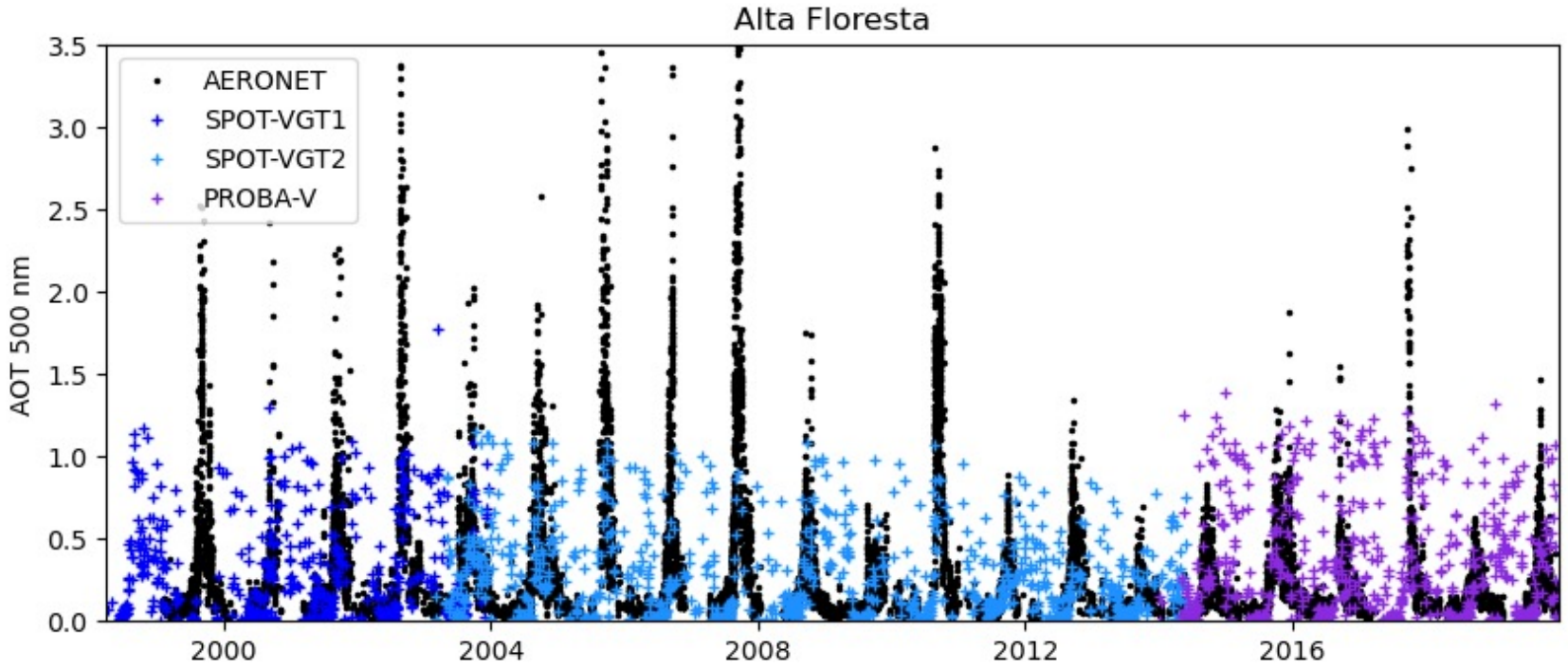


MEP environment setup



Results

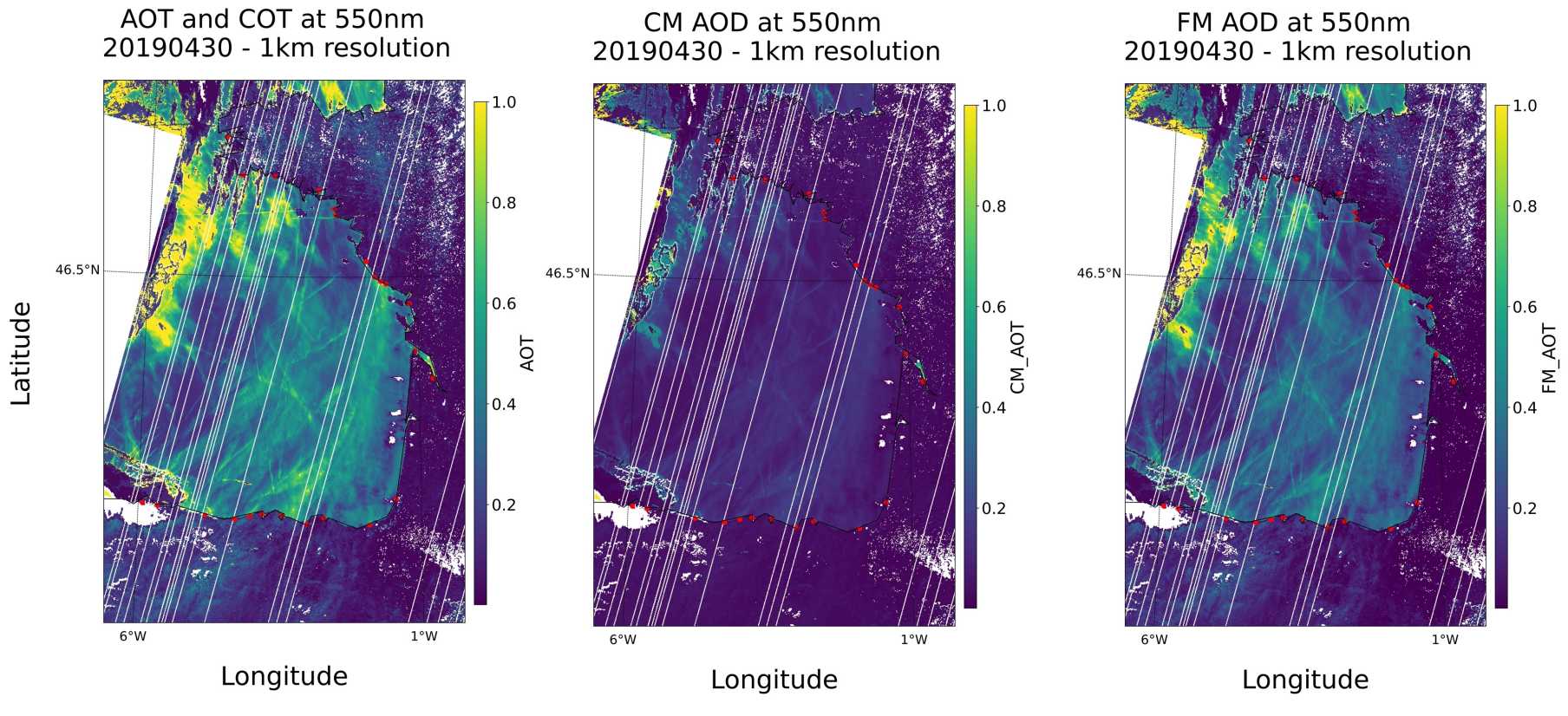
- Thanks to the processing on the MEP environment, it was possible to deliver aerosol single scattering properties and surface reflectance over:
  - 20 years of data over selected key areas of the ***harmonised*** archive.



Results

- Thanks to the processing on the MEP environment, it was possible to deliver aerosol single scattering properties and surface reflectance over:
  - 20 years of data over selected key areas.
  - 1 km product over Europe during 2019 from PROBA-V.

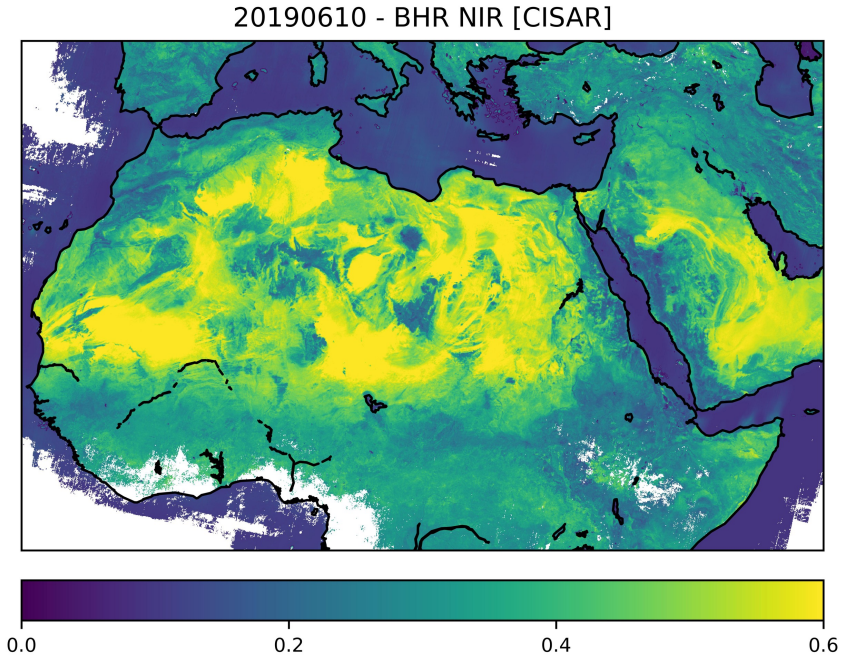
Case study: ship trails in the Biscay bay correctly identified as Fine Mode (FM) Aerosol Optical Thickness (AOT). The red dots represent the harbours present in the region.

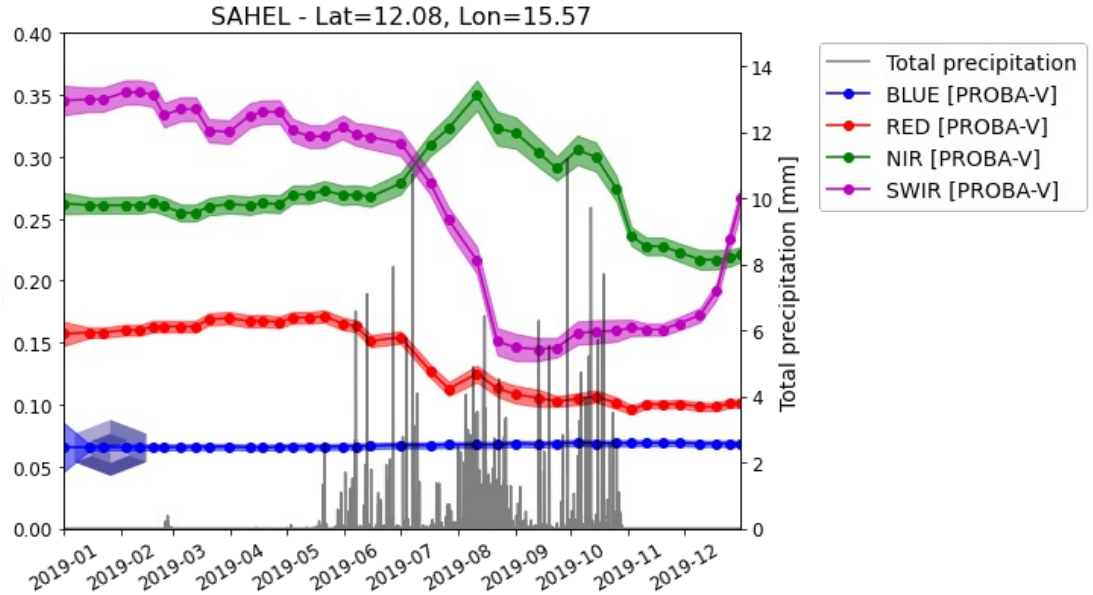


Results

- Thanks to the processing on the MEP environment, it was possible to deliver aerosol single scattering properties and surface reflectance over:
  - 20 years of data over selected key areas.
  - 1 km product over Europe during 2019 from PROBA-V.
  - 5 km global product during 2019 from PROBA-V.

Case study: Surface albedo retrieval over North Africa, in particular the seasonal cycle of the Sahel region following the rainy season.





Conclusions

- The MEP environment, providing easy access to whole SPOT-VGT and PROBA-V archive facilitated the harmonisation of the satellite observations and the processing with the CISAR algorithm.
- Highlights from the projects are of interest for land application and for climate studies, given the high quality retrieval of aerosol single scattering properties and surface reflectance and the possibility of deriving Long Term Data Record (LTDR).