**EXCEPTIONAL SAHARAN DUST EPISTODE OVER THE IBERIAN PENINSULA BY FOUR EARLINET STATIONS**

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**MOTIVATION**

Dust particles interact with the solar and thermal radiation modulating Earth’s radiative budget (aerosol-radiation interaction) and, acting as ice-nucleating particles, they enhance the heterogeneous glaciation of cloud water, making it freeze earlier and at higher temperatures than otherwise (aerosol-cloud interaction). Due to the multiple climate-relevant processes involving mineral dust particles, such kind of particles are still a target under investigation. The aim of this work is to characterize the vertical distribution and temporal evolution of an exceptional Saharan dust event which occurred between 20 and 24 February 2016 (boreal winter) over the Iberian Peninsula, and was detected by four EARLINET stations.

**INSTRUMENTATION**

**RESULTS**

Due to a complex scenario, 2 different plumes reached the Iberian Peninsula following different paths, with a final stage where a zonal flow swept the dust towards the Mediterranean Sea. Stage I: plume 1 reached only GR on 20D and EV on 20D. Stage II: plumes 1+2 reached all stations.

**METHODOLOGY**

**CONCLUDING REMARKS**

An unusual Saharan dust outbreak, which occurred on 20-24 February 2016 over the Iberian Peninsula has been analyzed paying special attention to the particle vertical distribution of their optical properties. To this aim, four EARLINET-AERONET stations were selected. This dust outbreak event was advected with two distinct plumes reaching the Iberian Peninsula following different paths and a final stage where a zonal flow swept the dust towards the Mediterranean. Backscatter-related Angström exponent and particle linear depolarization ratios were mainly around 0 and 0.20-0.30, respectively. As an example, particle microphysical properties derived by GRASP has been presented. In the future, particle microphysical properties and the radiative impact of this event will be analyzed.