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## **Raman LIDAR measurements at Roque de los Muchachos Observatory.**

*Thursday, 14 July 2022 16:30 (30 minutes)*

The ARCADE Raman Lidar (RL) has been installed at ORM in October 2018 for the pre-production phase of Cherenkov Telescope Array (CTA). The RL has collected vertical profiles of aerosol optical properties and water vapour two times a day, at sunrise and sunset, in automatic and unattended mode. Although the on-site services have been less than scheduled, mainly because the COVID-19 outbreak, and taking also into account the characteristics and the operation constraints of the instrument, the data are of good quality. The data analysis has been tested and improved also by comparison with aerosol measurements taken by a nearby located AERONET sunphotometer. A general overview of the profiles retrieved as well an analysis of case studies (e.g. Saharan dust events, volcanic aerosols during the Cumbre Vieja eruption etc.) is discussed and commented along with the technical upgrades designed for the instrument to improve its performances. A first assessment of the atmospheric aerosol optical properties climatology is reported.

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