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UV-Indien Network- a network dedicated to the long-term monitoring of UV radiation in the Indian Ocean.

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Radiation (UV) is one of the main components of solar radiation transmitted by the Earth's atmosphere. Exposure to UV radiation can have both positive and negative effects on the biosphere and humans in particular. Overexposure significantly increases the risk of skin cancer and eye problems.

Ozone, cloud cover and zenithal solar angle are the main parameters affecting UV radiation levels at the surface. Stratospheric ozone in particular strongly absorbs UV radiation. A dense cloud cover absorbs UV radiation, while a split cloud cover may tend to amplify it.

Although the stratospheric ozone layer is showing signs of recovery from reduced ozone-depleting substances. The impact of greenhouse gases on the climate is still in increase and global climate models anticipate an acceleration in Brewer-Dobson Circulation, which would lead to lower ozone levels in the tropics. Butler et al. (2016) estimate a decrease in stratospheric ozone in the tropics of 5 to 10 DU for all climate scenarios. Some recent projections (Lamy et al., 2019) predict a 2-3% increase in UVR in the southern tropical band, a region where UV levels are already extreme.

The purpose of the UV-Indien network is to :

- Monitor UV levels at different sites in the Western Indian Ocean (WIO)
- Describe the annual and inter-annual variability of UV radiation in the WIO
- Perform regional climate projections of UV radiations, validated by quality ground measurements.

UV-Indien is split into three phases. The first phase began in 2016, with the deployment of the first measurement sites (Reunion Island, Madagascar, Seychelles, Rodrigues). These sites are equipped with a broadband radiometer measuring the UVI and a camera estimating the coverage and sometimes a spectrometer for the measurement of total ozone. The second phase from 2019, sees the extension of this network to 4 other sites (Juan de Nova, Diego Suarez, Fort Dauphin and Grande Comoros). The data validation phase began in 2019 (comparative study with satellite data)

and will also propose the study of the variability of UV radiation on different sites. Finally, climate projections will be made from 2020 onwards and will use data from the network to validate the results.

The aim of this communication is to describe the entire network and its objectives. The first results, as well as the first climatologies will also be discussed.