File revision date:
July 2023

Data Set Description:

PI:	Richard Querel
Site(s):	Lauder, New Zealand. 45.04° S, 169.68° E, 370 m
Measurement Quantities:	NO_2, aerosol, O_3

Contact Information:

Name:	Richard Querel
Address:	National Institute of Water & Atmospheric Research Ltd (NIWA)
	3513 Becks-Lauder Road, Lauder, Otago, New Zealand
Phone:	+64 3 440 0400
Email:	richard.querel@niwa.co.nz

Reference Articles:

Kreher et al., 2020, AMT 13, 2169, https://doi.org/10.5194/amt-13-2169-2020
Roscoe et al., 2010, AMT 3, 1629, https://doi.org/10.5194/amt-3-1629-2010

Instrument Description:

The MAX-DOAS instrument at Lauder is a commercial system, EnviMeS SkySpec 1D (elevation scanning only, fixed azimuth) from EnviMeS GmbH (now Airyx GmbH). It has high grade Avantes dual-spectrometers with back thinned detectors, wavelength ranges of approximately 300–450 and 400–550 nm, for the 'UV' and 'VIS' spectrometers, respectively, and spectral resolutions of ~0.6 nm. The spectrometers are temperature stabilised to 20 °C and the elevation scanning head maintains a self-corrected viewing elevation angle.

Algorithm Description:

The raw spectra from the MAX-DOAS are corrected for electronic offset and dark current and submitted to the FRM4DOAS central processing system. The output from FRM4DOAS are low-vertical resolution profiles of tropospheric NO_2 and aerosol (off-axis products) and total columns of ozone (zenith products). FRM4DOAS is described here: https://frm4doas.aeronomie.be/index.php

Instrument history

Lauder EnviMeS MAXDOAS: data since 2015
Spring deployment at Arrival Heights, Antarctica, 2015
Campaign participation in CINDI-2, Cabauw, 2016
Long-term operational at Lauder from 2016 to present day