

Variation Over Time of the Du Mortier Calibration Algorithm for Ground-Based Spectrometer.

Abstract

Background: Having a stable and steady calibration constants increases the likelihood of a spectrometer to perform as expected over a reasonable period of time. The purpose of this paper is to study the variation over time of the Du Mortier calibration algorithm used in a spectrometer for atmospheric condition measurement. This is carried out over a course of six months and the measurements were taken for every minute intervals from 8.30am to 4.30pm in three locations in Kota Kinabalu. By using the improved Langley method, monthly calibration constants for eight wavelengths were determined for Du Mortier model. Results shows that there were statistically significant differences between mean calibration constants when comparing the selected months. However, if only wavelengths of 460nm, 500nm, 540nm, 580nm and 620nm are taken into account, the results say otherwise.