

## Near-sea-level langley calibration algorithm

### Abstract

As compared to other methods, measurement of aerosol optical depth (AOD) using sunphotometers offer several advantages. However, it suffers a drawback as calibration of the instrument required to be performed at high altitude due to temporal drifts in the atmospheric condition during the calibration. To solve this, a new Langley calibration algorithm has been designed for AOD measurement using spectroradiometer instrument. The key advantages of the proposed algorithm are its objectivity, computational efficiency and the ability to detect short intervals of cloud transits. It avoids travelling to high altitude mountain that the conventional calibration procedure always practiced for frequent calibration. Most importantly, neither it requires priori knowledge of the instrument calibration nor a collocated calibrated instrument for nominal calibration transfer to perform the cloud-screening procedure.