



Long-term tropical tropospheric ozone column retrievals using the Convective Clouds Differential (CCD) technique

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Ozone influences most of the chemical reactions in the troposphere. Its tropospheric abundance can be retrieved using space-borne observations of vertically integrated ozone and cloud heights. The Convective Clouds Differential (CCD) technique (Ziemke et al., 1998 and Valks et al., 2014) takes advantage of the frequent occurrence of convective clouds in the western Pacific region by subtracting above-cloud ozone of this region from clear-sky ozone elsewhere to derive global monthly mean tropospheric amount. An important assumption is that the above-cloud ozone in the western Pacific simulates the stratospheric ozone and that the stratospheric ozone field is invariant with longitude; which is approximately true in the tropics. A CCD algorithm has been developed and is applied to optical remote sensing observations from three satellite instruments, so that a unique long-term record of monthly averaged tropical (20°S, 20°N) tropospheric vertically integrated ozone (1995-2012) is created. The validation of the CCD results with tropospheric ozone data from ozonesondes (Tompson et al., 2003) and Limb-Nadir matching observations (Ebojie et al. 2014) will be presented.