



The ranking of the effect of proxies on the space and time variability of stratospheric ozone profiles

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The paper is focusing on the relative importance of proxy time series for explaining variations in the vertical ozone profiles. Studied proxies include (1) dynamical proxies (Quasi Biennial Oscillation (QBO), El Niño Southern Oscillation (ENSO), Arctic Oscillation (AO), Antarctic Oscillation (AAO) and Tropopause Pressure), extraterrestrial proxies (11-year solar cycle) and (3) stratospheric composition proxies (aerosol optical depth at 550 nm and equivalent effective stratospheric chlorine; EESC). Results are presented for ozone profiles from 5 well maintained Lidar stations located in the northern mid-latitudes, northern subtropics and southern mid-latitudes and collocated SBUV measurements. We present the short and long term ozone variability attributed to each proxy and its ranking at 7 vertical ozone layers over Hohenpeißenberg, Haute Provence, Table Mountain, Mauna Loa and Lauder.