Supplement of Atmos. Meas. Tech., 19, 529–547, 2026
https://doi.org/10.5194/amt-19-529-2026-supplement
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Atmospheric Measurement Techniques
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EGU

Supplement of

Validation of SNPP OMPS limb profiler version 2.6 ozone profile retrievals against correlative satellite and ground based measurements

Nigel A. D. Richards et al.

Correspondence to: Nigel A. D. Richards (nigel.richards@nasa.gov)

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Site Name	Data Availability	PI Name	PI Affiliation
Barajas	AVDC;WOUDC	Moreta, Juan	Instituto Nacional Meteorologia
Boulder, CO	AVDC;CMDL	Johnson, Bryan J.	NOAA Earth System Research Laboratory
Broadmeadows	AVDC;WOUDC	Tully, Matt	Australian Bureau of Meteorology
Churchill	EVDC;AVDC;WOUDC	Tarasick, David	Meteorological Service of Canada
Goose Bay	EVDC;AVDC;WOUDC	Tarasick, David	Meteorological Service of Canada
Haute Provence	AVDC;NDACC	Godin-Beekmann, Sophie	Laboratoire Atmospheres, Milieux, Observations Spatiales du CNRS
Hilo, HI	AVDC;CMDL	Johnson, Bryan J.	NOAA Earth System Research Laboratory
Hohenpeissenberg	AVDC;WOUDC	Claude, Hans	Deutscher Wetterdienst
Hong Kong	AVDC;WOUDC	Lee, T. C.	Hong Kong Observatory
Huntsville, AL	AVDC;CMDL	Johnson, Bryan J.	NOAA Earth System Research Laboratory
Irene	EVDC;AVDC;SHADOZ	Coetzee, Gerrie J.R.	South African Weather Service
Izana	AVDC;NDACC	Redondas, Alberto	Agencia Estatal de Meteorologia
La Reunion, St. Denis	EVDC;AVDC;SHADOZ	Posny, Francoise	Laboratoire de l'Atmosphere et des Cyclones
Lauder	AVDC;NDACC	Zeng, Guang	National Institute of Water and Atmospheric Research
Legionowo	AVDC;WOUDC	Kois, Bogumil	Institute of Meteorology and Water Management
Lindenberg	AVDC;WOUDC	Voemel, Holger	Deutscher Wetterdienst
Macquarie Island	AVDC;WOUDC	Tully, Matt	Australian Bureau of Meteorology
Nairobi	EVDC;AVDC;SHADOZ	Felix, Christian	Swiss Meteorological Institute
Natal	EVDC;AVDC;SHADOZ	Thompson, Anne M.	NASA Goddard Space Flight Center
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Paramaribo	AVDC;WOUDC	Scheele, Rinus	Royal Netherlands Meteorological Institute
Payerne	AVDC;WOUDC	Stubi, Rene	Swiss Meteorological Institute

Praha	AVDC;WOUDC	Skrivankova, Pavla	Czech HydroMeteorological Institute - Prague
San Pedro	EVDC;AVDC;SHADOZ	Voemel, Holger	National Center for Atmospheric Research
Sepang	EVDC;AVDC;SHADOZ	Mohamad, Maznorizan	Malaysian Meteorological Department
Stony Plain	EVDC;AVDC;WOUDC	Tarasick, David	Meteorological Service of Canada
Suva	AVDC;CMDL	Johnson, Bryan J.	NOAA Earth System Research Laboratory
Trinidad, Head, CA	AVDC;CMDL	Johnson, Bryan J.	NOAA Earth System Research Laboratory
Tsukuba	AVDC;WOUDC	Head, JMA Ozone Layer Monitoring Office	Japan Meteorological Agency
Ushuaia	AVDC;WOUDC	Sanchez, Ricardo	National Meteorological Service of Argentina
Yarmouth	EVDC;AVDC;WOUDC	Tarasick, David	Meteorological Service of Canada

Table S1: Details of the ozonesondes used in this study.

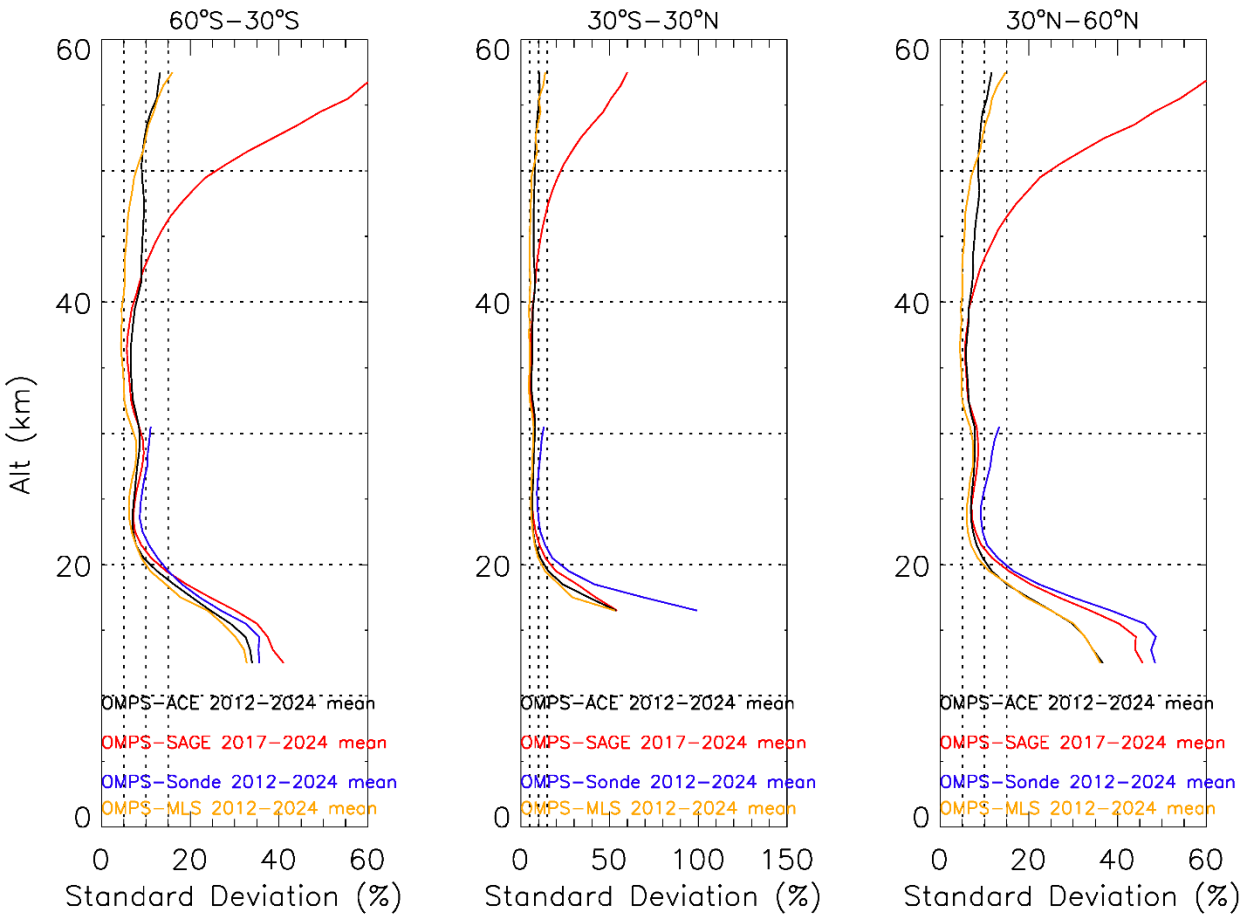

Figure S1: Standard deviations of mean profile differences between OMPS LP and correlative observations.

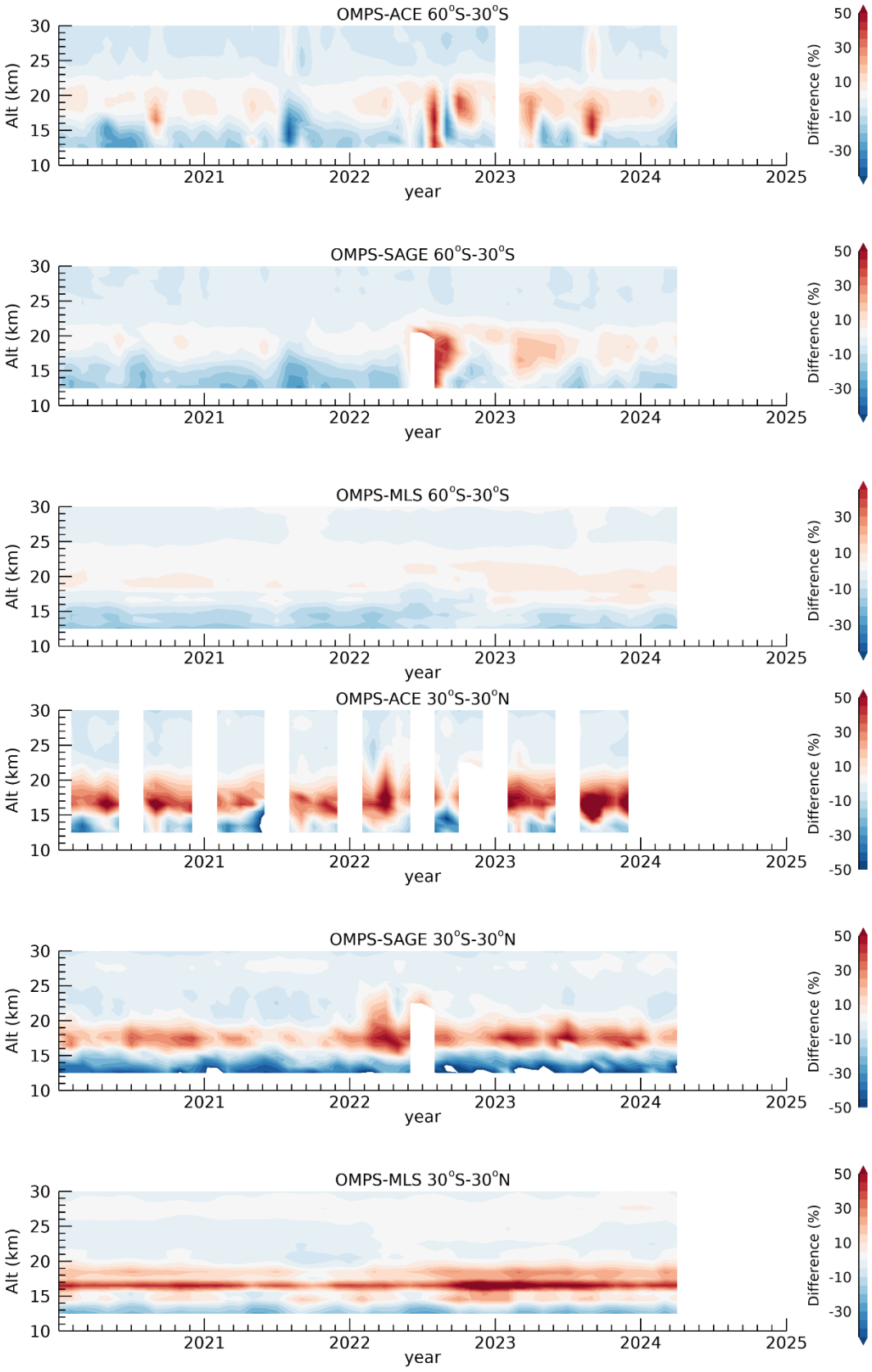

Figure S2: Deseasonalised timeseries of the differences between OMPS LP and colocated correlative satellite observations, for the tropics and southern mid-latitudes.

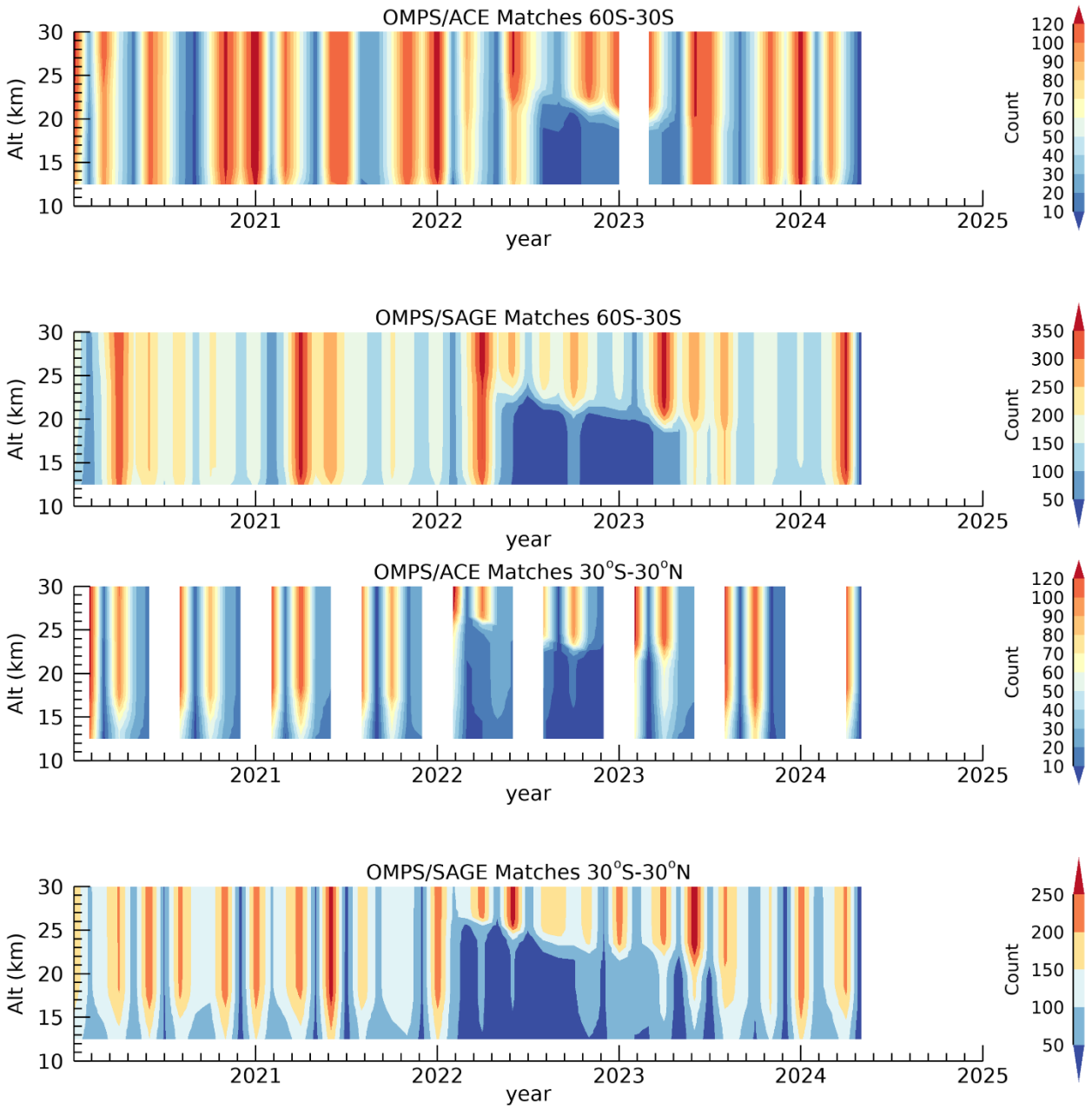

Figure S3: Time series of the number of OMPS LP observations at each altitude for the time period January 2020 to April 2024.

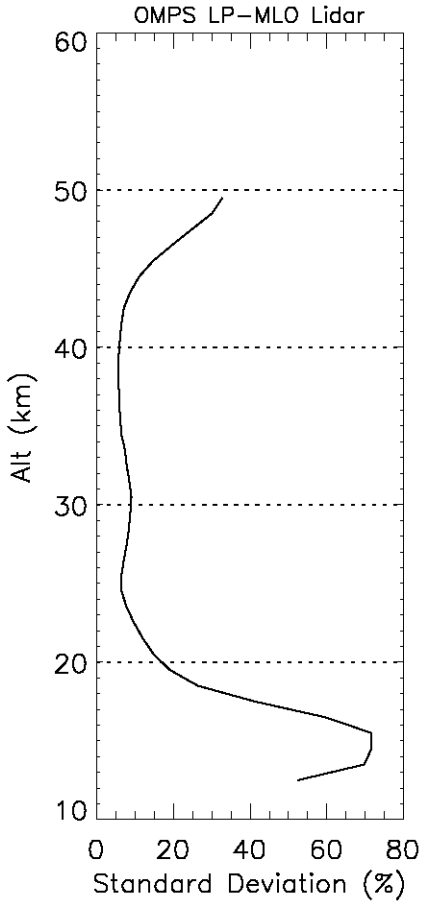

Figure S4: Standard deviation of mean profile differences between OMPS LP and MLO lidar.

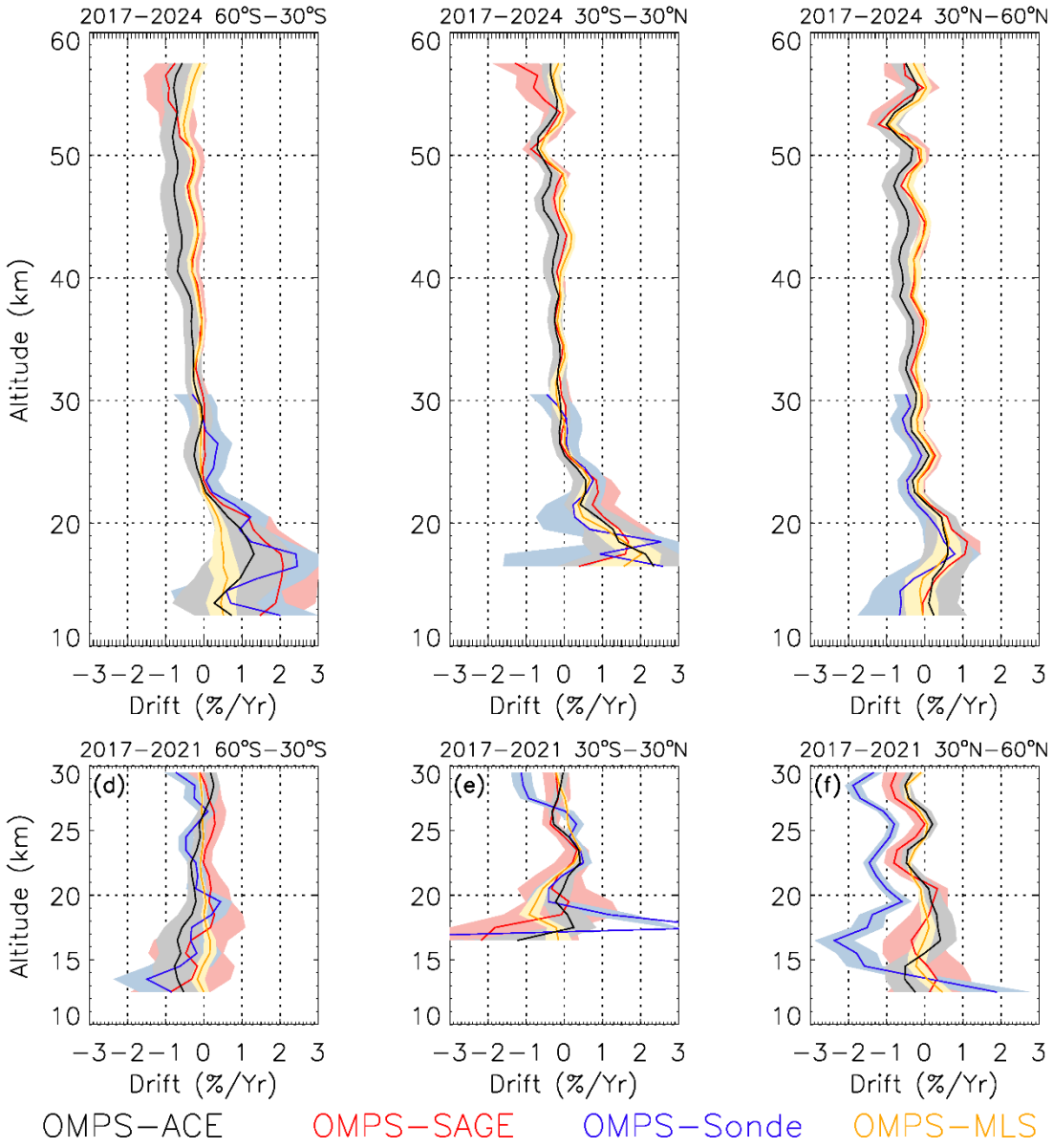

Figure S5: Relative drifts for OMPS LP version 2.6 ozone in % per year relative to correlative observations, calculated using deseasonalized data from January 2017 to April 2024 for panels (a-c) and January 2017 to December 2021 for panels (d-f), except for SAGE III/ISS for which data starts in June 2017. Shaded areas show 2 sigma for the linear fit, only data above the tropopause is shown.

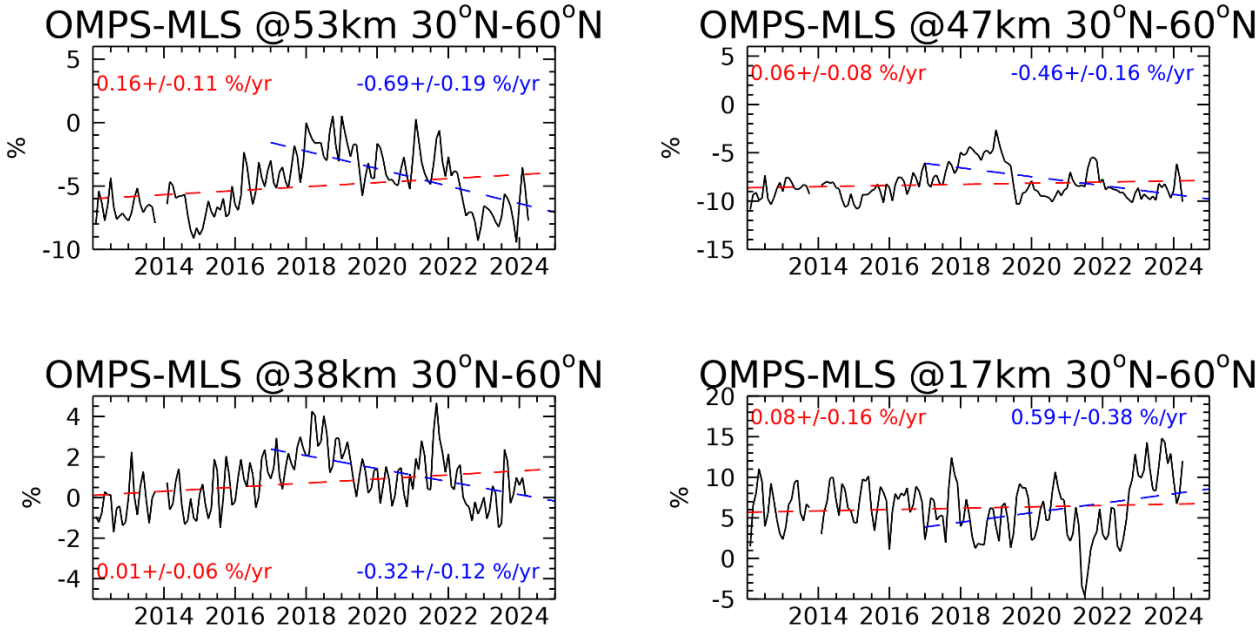

Figure S6: Time series of monthly mean differences between OMPS LP and MLS ozone in the 30N-60N latitude band at 4 altitudes for the time period 2012 to 2024. The red line shows the relative drift calculated for the period 2012-2024 and the blue line shows the drift calculated for the period 2017-2024. The inset text shows the drift values and 2 sigma errors on the linear fits for the two time periods.