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## Statistical analysis of water vapour and ozone in the UT/LS observed during SPURT and MOZAIC

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**Abstract.** A statistical analysis for the comparability of water (H<sub>2</sub>O) and ozone (O<sub>3</sub>) data sets sampled during the SPURT aircraft campaigns and the MOZAIC passenger aircraft flights is presented. The Kolmogoroff-Smirnoff test reveals that the distribution functions from SPURT and MOZAIC trace gases differ from each other with a confidence of 95%. A variance analysis shows a different variability character in both trace gas data sets. While the SPURT H<sub>2</sub>O data only contain atmospheric processes variable on a diurnal or synoptical timescale, MOZAIC H<sub>2</sub>O data also reveal processes, which vary on inter-seasonal and seasonal timescales. The SPURT H<sub>2</sub>O data set does not represent the full MOZAIC H<sub>2</sub>O variance in the UT/LS for climatological investigations, whereas the variance of O<sub>3</sub> is much better represented. SPURT H<sub>2</sub>O data are better suited in the stratosphere, where the MOZAIC RH sensor loses its sensitivity.

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