



A new scientific data product of H₂O/HDO columns from TROPOMI 2.3 μm reflectance measurements

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A new scientific data set of vertical column abundances of the water vapour isotopologues H₂O and HDO simultaneously retrieved from short-wave infrared reflectance measurements by the Tropospheric Monitoring Instrument (TROPOMI) spanning the whole period from TROPOMI first light to today is presented. Information about isotopic fractionation of water vapour in the atmosphere allows to conclude on the atmospheric transport of air parcels and by that is highly relevant, for example, for investigations of the hydrological cycle. The retrieval is performed with the Shortwave Infrared CO Retrieval (SICOR) algorithm, which utilises a profile scaling approach. A bias correction has to be applied to a-posteriori δD and HDO. The data set is validated with ground-based Fourier transform infrared (FTIR) measurements by the Total Carbon Column Observing Network (TCCON). The average of the station biases is approximately $(-1 \pm 8) \%$ in H₂O and $(1 \pm 9) \%$ in HDO.