

The SPARC water vapour assessment II: Overview of Results and Characterization of Instruments and Data Records

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Within the SPARC Water Vapour Assessment II (WAVAS-II), 40 water vapour data sets from 15 satellite instruments and several water vapour isotopologue data records have been analyzed and inter-compared in order to characterize their general performance and in particular potential biases and instrumental drifts. The time period covered is from 1986 to the end of 2016 with the bulk of data records covering the first 10 to 15 years of the 21st century. Here we introduce the characteristics of the data sets, in terms of their spatial and temporal coverage, vertical resolution, reported errors, screening recommendations, and provide an overview of project results. The analysis has been performed with the same tools applied to all data sets in a similar way in order to obtain the best possible consistency among the results. The analysis and inter-comparison approaches will be presented, and we will point out how the different data characteristics were accounted for within the inter-comparison.

Key words: water vapour, satellite measurements, data assessment, WAVAS-II