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Ground-based Measurements of Ozone and Related Trace Gases: Status of Networks and Recent Developments in Ozone Instrumentation

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It is well-known that ozone measurements from space rely on ground-based instrumentation for validation because the latter are independently calibrated with absolute standards. For this purpose, a number of networks are used, deploying ozonesondes, lidar and a range of spectrometers. However, ground-based ozone instruments, many measuring a variety of trace gases and/or co-located with other sensors, are valuable in themselves. Long-term records are used for analyses of trends and interannual variability; they may anchor regional studies and intensive field campaigns. I will give a status report on ground-based networks, including the Dobson, Brewer, and sondes (e.g., SHADOZ), the multi-species and multi-instrument NDACC, TOLNET (tropospheric lidar), and the emerging Panda-net/Pandonia. Quality assurance activities, designed to improve the accuracy of ozone data, are described, along with new capabilities for global ozone.