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# Decadal Changes in Tropospheric Ozone

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In spite of several observational records spanning a period of more than 30 years by now, many features of the ozone variability remain poorly understood and numerical models are currently not able to simulate past trends in surface ozone concentrations correctly. The lack of consensus in the scientific community on how tropospheric ozone has changed in recent decades stimulated the organization of two open scientific meetings on this topic. The first workshop took place in October 2009 and was hosted by NOAA in Boulder, Colorado, and the second meeting was convened in Toulouse, France, in April 2011. These workshops made progress towards a robust and comprehensive analysis of tropospheric ozone changes during the recent decades but also identified several issues that limit the scope which such analyses can assume. The most serious concerns are related to insufficient geographical coverage of long-term observations and the lack of a community approach to evaluate tropospheric chemical processes in numerical models. Methods need to be developed, in a dialogue between the measurement and modeling communities, how to best confront simulation results with observational data. Other issues that were discussed concern the quality of various long-term data records; it was found that agreement between adjacent sites has improved considerably during the late 1990s, but discrepancies remain in earlier portions of the record.