



MetNH₃: Metrology for ammonia in ambient air

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Measuring ammonia in ambient air is a sensitive and priority issue due to its harmful effects on human health and ecosystems. The European Directive 2001/81/EC on “National Emission Ceilings for Certain Atmospheric Pollutants (NEC)” regulates ammonia emissions in the member states. However, there is a lack of regulation to ensure reliable ammonia measurements namely in applicable analytical technology, maximum allowed uncertainty, quality assurance and quality control (QC/QA) procedures as well as in the infrastructure to attain metrological traceability. Validated ammonia measurement data of high quality from air monitoring networks are vitally important for identifying changes due to implementations of environment policies, for understanding where the uncertainties in current emission inventories are derived from and for providing independent verification of atmospheric model predictions.

The new EURAMET project MetNH₃ aims to develop improved reference gas mixtures by static and dynamic gravimetric generation methods, develop and characterise laser based optical spectrometric standards and establish the transfer from high-accuracy standards to field applicable methods. MetNH₃ started in June 2014 and in this presentation the first results from the metrological characterisation of a commercially available cavity ring-down spectrometer (CRDS) will be discussed. Also first tests and results from a new design, Controlled Atmosphere Test Facility (CATFAC), which is to be characterised and used to validate the performance of diffusive samplers, denuders and on-line instruments, will be reported. CAFTEC can be used to control test parameters such as ammonia concentration, relative humidity and wind speed. Outline plans for international laboratory and field intercomparisons in 2016 will be presented.