

QOS2016-222, 2016

Quadrennial Ozone Symposium of the International Ozone Commission

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EUBREUNET RBCC-E Huelva 2015 Ozone Brewer Intercomparison

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The X Regional Brewer Calibration Center for Europe (RBCC-E) intercomparison was held at El Arenosillo Atmospheric Sounding Station of the "Instituto Nacional de Técnica Aeroespacial" (INTA) during the period of May 25th - June 5th, 2015. This X campaign was a joint EUBREUNET campaign in collaboration with the Area of Instrumentation and Atmospheric Research of INTA, with the support of the COST ACTION 1207. Twenty-one Brewer instruments from eleven countries participated at the Arenosillo campaign. In addition, the solar UV irradiance calibration was performed by the traveling reference standard QASUME of the World Calibration Center for UV (WCC-UV).

In parallel, the COST action organized several experiments to advance the quality of the Brewer data. Among them, a study of the Dead Time determination using the direct-sun measurements and the temperature dependence of the Brewer diffuser led by I. Fountoulakis, cosine response measurements led by A. Serrano and J. Vilaplana, investigation of the effects of polarization of the input window conducted by H. Diemoz and V. Carreño, the aerosol optical depth calibration led by T. Carlund, the Stray Light characterization performed by T. Karppinen and T. McElroy, comparison of total ozone between Phaethon and Brewer performed by Th. Drosoglou, and comparison of UV reference lamp by P. Babal and O. Marianenko.

This work shows a general overview of the ozone comparison focused on the correction of the stray light effect for the single-monochromator Brewer spectrophotometer derived by the comparison with a reference double-monochromator Brewer. Out of the 21 participating Brewer instruments, 16 agreed to better than +/-1% (76%) and 10 instruments agreed to better than +/-0.5 (50%). After applying the final calibration that included the Stray Light correction all working instruments agreed at the +/- 0.5% level.