



## **Three summers of tropospheric ozone measurements over Europe with IASI**

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We present tropospheric ozone column amounts obtained from infrared radiances measured by the IASI instrument aboard the MetOp-A satellite using an altitude-dependent regularization method. The retrieved products are ozone partial columns (especially 0-6km columns) and ozone profiles with about 1.5 degrees of freedom in the troposphere. First a summary of the method and a characterization of the retrieved products will be provided as well as the results of a validation using balloons sonde, satellite and ground-based instruments. A first validation exercise using balloon sonde measurements showed that the retrieved products do not present any significant bias ( $< 5\%$ ) and that the retrieval errors are consistent with the standard deviation of the difference between the sonde and IASI measurements. Results for an extended validation exercise that involved more data sets (ozone sonde, satellite and ground-based instruments) will then be presented. Finally since three summers (2007-2009) of IASI measurements are now available we will present tropospheric ozone measured over Europe for these three summers. Some specific events which have been detected will be highlighted: (1) detection of pollution events in 2007 and 2009 during heat wave periods, supported by comparisons with model simulations and other measurements; (2) detection of stratospheric intrusion in June 2008.