



The ozone hole detected in GOME-2 pro [U+FB01] les created with the retrieval algorithm OPERA

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We present operationally retrieved GOME-2 ozone profiles from the KNMI OPERA algorithm for the period August-December 2008 and show that for the first time it is possible to accurately measure the vertical distribution of stratospheric ozone for Antarctic ozone hole conditions from spectra measured at ultraviolet and visible wavelengths. Comparison with ozone sonde observations shows an excellent agreement for various ozone profile shapes representing different phases of the annual ozone hole cycle. A first analysis of the three-dimensional structure of the ozone hole shows for example that at the vortex edges ozone rich mid-latitude middle and upper stratospheric layers can be superimposed over ozone depleted lower stratospheric 'ozone hole' layers. These improved Antarctic ozone profile observations combined with the GOME-2 daily global coverage now for the first time enables the monitoring the three-dimensional structure of the ozone hole on a daily basis.