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The semianalytical cloud retrieval algorithm for SCIAMACHY II. The application to MERIS and SCIAMACHY data

A. A. Kokhanovsky, W. von Hoyningen-Huene, V. V. Rozanov, S. Noël, K. Gerilowski, H. Bovensmann, K. Bramstedt, M. Buchwitz, and J. P. Burrows

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Abstract. The SemiAnalytical Cloud Retrieval Algorithm (SACURA) is applied to the SCanning Imaging Absorption spectrometer for Atmospheric CHartography (SCIAMACHY) data. In particular, we derive simultaneously cloud optical thickness (COT) and cloud top height (CTH), using SCIAMACHY measurements in the visible (442 nm, COT) and in the oxygen A-band (755–775 nm, CTH). Some of the results obtained are compared with those derived from the Medium Resolution Imaging Spectrometer (MERIS), which has better spatial resolution and observes almost the same scene as SCIAMACHY. The same cloud algorithm is applied to both MERIS and SCIAMACHY data. In addition, we perform the vicarious calibration of SCIAMACHY at the wavelength 442 nm, using MERIS measurements at the same wavelength. Differences in the retrieved COT for the same cloud field obtained using MERIS and SCIAMACHY measurements are discussed.

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