Global and regional time series of cloud properties derived by hyperspectral measurements in the O_2 A-band

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Homogeneous long time series of cloudiness are needed to detect potential trends and can be used as observational support for climate models. As a further matter, variability of cloud properties affect as well the global radiation budget as the global hydrological cycle. Therefore we present joint time series of cloud properties (top height, optical thickness and albedo) derived from hyperspectral measurements of the sensor family GOME/SCIAMACHY/GOME-2. The retrievals are obtained from top-of-atmosphere backscattered solar light in the oxygen A-band using the Semi-Analytical CloUd Retrieval Algorithm SACURA. The physical framework relies on the asymptotic equations of radiative transfer. Moreover, analysis of global and regional maps can give insight into both natural and anthropogenic signatures of large scale climate perturbations.