# CO profile information from SCIAMACHY observations using 'cloud-slicing'

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From SCIAMACHY near IR observations the total atmospheric column density of CO can be retrieved including also the surface-near layers. The information content of the SCIAMACHY measurements is, however, not high enough to derive profile information (e.g. discriminate partial columns at different height layers) for individual observations, but averaged CO profiles for monthly means or longer periods can be derived

In this study we apply the so called cloud slicing technique, which was originally developed for TOMS Ozone observations, to SCIAMACHY CO observations. Compared to the UV spectral range, the radiance contrast difference between the clear and cloudy part of the satellite pixel is usually high in the near IR; thus even for rather small cloud fraction (about >10%) the observed CO column density mainly represents the partial column above the cloud top. From the differences of the partial columns profiles the average CO concentration can be calculated. We present profiles of the averaged CO profiles concentration nd partial columns from SCIAMACHY observations (seasonal and global variation) for different, mainly polluted regions of the earth. and We compare them to corresponding CO profiles results obtained with the same procedure from atmospheric models. In general, good agreement is found; however, there is are also systematic differences between the spatial patterns and also a systematic offsets between the SCIA and model data, especially over China.