



Shortwave flux profile study for the Cabauw BSRN site

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A radiative closure study is an important tool to evaluate the accuracy of atmospheric retrievals (e.g. cloud and aerosol properties), measurement techniques and models. Therefore, shortwave radiative closure analyses for clear-sky and cloudy skies have been performed for the Cabauw Baseline Surface Radiation Network (BSRN) site (51.97°N , 4.93°E) for cases between May 2008 and May 2009. The Doubling-Adding KNMI (DAK) code is used to simulate global irradiances. For the fully cloudy cases, the mean difference between simulated global irradiances and BSRN measurements is 6 W/m^2 (5%), with a standard deviation of 14 W/m^2 (13%). This difference is within the uncertainties of the model input parameters and measurement errors. For clear-sky cases the mean difference between simulated global irradiances and BSRN measurements is less than 1 W/m^2 . Recently we extended the analysis to the shortwave flux profiles. The cloud property profiles are obtained from the IPT (Integrated Profiling Technique) algorithm. The flux profiles and heating rate profiles are calculated using the DAK model. We will show some interesting case studies between May 2008 and May 2009.