Atmos. Chem. Phys. Discuss., 7, S3054–S3055, 2007
www.atmos-chem-phys-discuss.net/7/S3054/2007/

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Long-time global radiation for Central Europe derived from ISCCP Dx data" *by* N. Petrenz et al.

Anonymous Referee #1

Received and published: 12 July 2007

Referee Comment on manuscript

Long-time global radiation for central Europe derived from ISCCP DX data by N. Petrenz, M. Sommer and F.H. Berger

General comments: This study compares different long-time series (1984 - 2000) of global solar radiation at the surface in central Europe determined with various satellite products as well as surface measurements and model calculations. Comparisons are first made between different satellite products evaluated over Europe. Satellite measurements are then compared with surface radiation measurements over large areas in Germany. Trend analysis made for a number of individual stations in Germany show positive trends from 1984 to 2000. Surface measurements show considerably larger

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positive trends than ISCCP Dx data. In a last step satellite products are compared with regional model calculations for specific regions in Germany. The results show rather large uncertainties which are due to large uncertainties on the satellite as well as on the surface measurements and the model calculations. The paper is generally well written and comprehensible at least as far as the results go.

Specific comments: There are some discrepancies with regard to positive or negative deviations from one data set to the other: Page 8345, line 8: the difference should probably be +35 Wm-2

Page 8355, fig caption, line 3: the comparison should probably be GEBA - Dx

Page 8356, fig caption, line 4: the comparison should probably be DWD - Dx

The comparison between DWD and GEBA data is not justified. As far as this reviewer knows DWD and GEBA data from Germany are the same measurements stored in two different data banks. It is therefore not astonishing that the two datasets agree so well. The differences shown in fig. 7 are that small that it is most likely that these are originally the same measurements. GEBA data have been downloaded from the World Radiation Data Center (WRDC) in St. Petersburg. But the data from German sites that are in the WRDC were measured by the DWD.

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 8333, 2007.

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7, S3054–S3055, 2007