

## Metadata for: brazil\_solar\_par\_40km

### Identification Information

**Originator:** INPE (National Institute for Space Research) and LABSOLAR (Laboratory of Solar Energy/Federal University of Santa Catarina) - Brazil

**Title:** Solar Radiation in Brazil

**Description:** Photosynthetically active radiation in kWh/m<sup>2</sup>/day for 1 year organized into cells with 40km x 40km

**Time period for which the data is relevant:** indefinite

**Spatial Extend of Data:** Brazil

**Bounding Coordinates:**

**West Bounding Coordinate:** 78°10' W

**East Bounding Coordinate:** 28°30' W

**North Bounding Coordinate:** 8°10' N

**South Bounding Coordinate:** 36°10' S

**Constraints:**

**Access:** No restrictions

**Use:** Quoting the source is required: "INPE (National Institute for Spatial Research) and LABSOLAR (Laboratory of Solar Energy/Federal University of Santa Catarina) - Brazil"

**Contact Information:**

**Organization:** INPE - National Institute for Space Research

**Person:** Enio Bueno Pereira

**Mailing Address:**

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### Data Quality Information

**Lineage:** The BRASIL-SR model and the SPRING software (both developed by INPE - National Institute for Space Research) were used to produce the dataset and SHAPE files

**Attribute Accuracy:** The assessment of reliability levels of the BRASIL-SR model were performed through the evaluation of the deviations shown by the estimated values for solar radiation flux vis-à-vis the values measured at the surface (ground truth). This evaluation was done in two phases. The first phase consisted in an inter-comparison between the core radiation transfer models adopted by the SWERA Project to map the solar energy in the various countries participating in the project. The HELIOSAT model took part in this phase like benchmark due to its employment to map solar energy resources in countries from European Union. In the second phase, the solar flux estimates provided by the BRASIL-SR model were compared with measured values acquired at several solarimetric stations spread along the Brazilian territory

**Source Scale Denominator:** 1

### Spatial Reference Information

**Spatial Object Type:** Vector - polygon

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|---|
| <b>Horizontal Coordinate Scheme:</b> ---  |
| <b>Horizontal Units:</b> Decimal degrees  |
| <b>Resolution:</b><br><b>Latitude:</b> 0.07°<br><b>Longitude:</b> 0.04°   |
| <b>UTM Zone Number:</b> ---   |
| <b>Map Projection:</b><br><b>Name:</b> Geographic<br><b>Parameters:</b><br><b>Longitude of Central Meridian:</b> 54° W<br><b>Latitude of Projection Origin:</b> 0°<br><b>False Easting:</b> 0<br><b>False Northing:</b> 0 |
| <b>Other Coordinate System Definition:</b> ---  |
| <b>Cells:</b><br><b>Width:</b> 40km<br><b>Height:</b> 40km  |
| <b>Geodetic Model:</b><br><b>Horizontal Datum Name:</b> SAD-69<br><b>Ellipsoid Name:</b> Reference ellipsoid 1967 (International Astronomical Union)  |

## Entity and Attribute Information

**Entity and attribute overview:** Photosynthetically active radiation for the 12 months of the year in kWh/m<sup>2</sup>/day organized into cells with 40km x 40km

**Entity Label:** brazil\_solar\_par\_40km.shp

**Attribute Label:** ID\_CEL

**Attribute Definition:** cell identification

**Attribute Label:** LONGITUDE

**Attribute Definition:** longitude of the cell center

**Attribute Label:** LATITUDE

**Attribute Definition:** latitude of the cell center

**Attribute Label:** JAN

**Attribute Definition:** monthly average of the photosynthetically active radiation for January

**Attribute Label:** FEB

**Attribute Definition:** monthly average of the photosynthetically active radiation for February

**Attribute Label:** MAR

**Attribute Definition:** monthly average of the photosynthetically active radiation for March

**Attribute Label:** APR

**Attribute Definition:** monthly average of the photosynthetically active radiation for April

**Attribute Label:** MAY

**Attribute Definition:** monthly average of the photosynthetically active radiation for May

**Attribute Label:** JUN

**Attribute Definition:** monthly average of the photosynthetically active radiation for June

**Attribute Label:** JUL

**Attribute Definition:** monthly average of the photosynthetically active radiation for July

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**Attribute Label:** AUG

**Attribute Definition:** monthly average of the photosynthetically active radiation for August

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**Attribute Label:** SEP

**Attribute Definition:** monthly average of the photosynthetically active radiation for September

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**Attribute Label:** OCT

**Attribute Definition:** monthly average of the photosynthetically active radiation for October

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**Attribute Label:** NOV

**Attribute Definition:** monthly average of the photosynthetically active radiation for November

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**Attribute Label:** DEC

**Attribute Definition:** monthly average of the photosynthetically active radiation for December

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**Attribute Label:** ANNUAL

**Attribute Definition:** annual average of the photosynthetically active radiation

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**Attribute Label:** SPRING

**Attribute Definition:** seasonal average of the photosynthetically active radiation for Spring

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**Attribute Label:** SUMMER

**Attribute Definition:** seasonal average of the photosynthetically active radiation for Summer

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**Attribute Label:** FALL

**Attribute Definition:** seasonal average of the photosynthetically active radiation for Fall

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**Attribute Label:** WINTER

**Attribute Definition:** seasonal average of the photosynthetically active radiation for Winter

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## **Metadata Reference Information:**

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**Metadata Date:** August 8, 2009

**Metadata Contact:**

**Organization:** INPE - National Institute for Space Research

**Person:** Enio Bueno Pereira

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