

SOLAR AND MET DATA ACQUIRED IN SONDA NETWORK – MEASUREMENTS AND QUALITY CONTROL PROCEDURES.

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This paper intends to describe the reference procedures adopted for data acquisition and quality control in the SONDA network. The SONDA network aims at acquiring, storing and delivering free access to high quality ground data, which can be used as benchmark to improve and validate numerical models used to solar and wind resource assessment or forecast. Currently, SONDA network has 18 measurement sites located throughout the Brazilian Territory in order to representative data from all typical regional climates in the continental area of the country. Most of the measurement sites are collecting data since 2004. Both the metadata and ground measurements are available at the INTERNET website (sonda.ccest.inpe.br) for free download. All equipment and sensors are first class as recommended by WMO and MEASNET. To ease its use, the solarimetric and meteorological data has been converted into a common text format that can be imported by any commercial spreadsheet application or read by a simple numerical code in FORTRAN or other programming language. All data sets have been evaluated by a quality control procedure, similar to the recommended by WMO for BSRN network. Four out of 18 sites are collecting data for wind speed and direction in 3 heights above the ground together with global, diffuse and direct solar irradiation data at the surface. Solarimetric and meteorological data acquired at these four sites are included in the Baseline Surface Radiation Network (BSRN) managed by WMO. Also, aerosol optical thickness data is acquired at these four sites and it is made available at the AERONET website. The SONDA database has been contributing significantly to the numerical model improvement and confidence evaluation of the solar and wind energy resource data provided by them. Temporal data series acquired in SONDA network is providing important information to the next edition for Brazilian Atlas for Solar Energy that will be published by INPE in 2014.