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Comparison analysis of global horizontal irradiance between Korea Institute of Energy Research and NASA

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Solar energy is one of the typical energy of new and renewable energy. Research and development about photovoltaic power generation, solar heat power generation, and solar heat directly use solar energy which has been proceeding consistently. Insolation is the total amount of solar radiation energy received on a given surface area during a given time. It generally classifies 3 sorts. Global Horizontal Irradiance (GHI) which includes both Direct Normal Irradiance (DNI) and Diffuse Horizontal Irradiance (DIF). It has a significant effect on installation and analysis of photovoltaic system. Korea Institute of Energy Research (KIER) had measured GHI in 15 cities from 1982. By 1990s, GHI and DNI had been measured in 16 cities. Measurement area had been decreased from 2008 to 2009. But the area has been increased recently. In this paper, the GHI measurement value of KIER and satellite data of NASA SSE were compared for verifying reliability of the measurement value. Daejeon was selected for comparison area and daily GHI data was compared based on long term database from 1992 to 2005.

Biography

Shin Young Kim has completed her Master's from Department of Electrical, Information and Control Engineering in Hongik University and PhD studies from Department of Electricity and Electronic Engineering in Korea University. She is a Student Researcher of KIER, a government-contributed research institute of energy technology field.

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