

Study Indicates Global Warming Trend

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Summers are getting sunnier in Oregon, according to evidence presented today by University of Oregon physicists during the 2005 Solar World Congress in Orlando. The study is a first step toward testing and refining regional climate models for the Pacific Northwest that will help track global warming.

In sharp contrast to reports of increased global dimming, the study's researchers reported a 10 to 15 percent increase in solar radiation at sites in Burns, Hermiston and Eugene over the last 25 years, according to an initial analysis of data collected since 1979 by the university's Solar Radiation Monitoring Laboratory.

"Oregon is a state famous for rain but in fact, Oregon is getting much more sunshine," said Frank Vignola, the laboratory's director and the study's co-author. "In fact, about two-thirds of the Northwest gets as much or more solar radiation than Florida. The northwestern corner of Oregon, which includes the population center in Portland, gets about 20 percent less."

Vignola and lead author Laura Riihimaki, a physics doctoral student, also found that Oregon winters are becoming cloudier. However, solar radiation levels during December average 75 percent less than July, so sunnier summers more than offset the increase in winter cloud cover.

"Now that we've characterized the trend, we can use this data with regional climate models to tell us how global warming is affecting the region and improve our success at predicting climate change in the

Northwest," Riihimaki said. "Understanding long-term changes and trends in solar radiation is important to agriculture and for assessing the risks and reliability of power generated from hydroelectric and solar energy facilities."

The university's Solar Radiation Monitoring Lab, which collects data throughout the Northwest, is helping develop the infrastructure to integrate solar resources into the regional energy mix.

Though monitoring is done globally, no other site has measured solar radiation continuously for such a long period. "We are working with the largest and highest quality continuous record in the world," Vignola said.

Unlike other recent "global dimming" studies, which have reported decreases of about two percent per 10-year-period over large sections of the world, this study analyses direct normal data.

"We have better data because we're looking at this with direct beam instruments which are more stable than global instruments," Vignola said, explaining that most recent studies on global dimming have been done with instruments whose sensitivity decreases over time.

Source: University of Oregon

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