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Improving Short-Term Forecast of Solar Irradiance

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Abstract : By using different ranges of daily sky clearness index defined in this paper, any day can be classified as a clear sky day, a partly cloudy day or a cloudy day. This paper demonstrates how short-term forecasting of solar irradiation can be improved by taking into consideration the type of day so defined. The source of day type dependency has been identified. Forecasting methods that take into consideration of day type have been developed and their efficacy have been established. While all methods that implement some form of adjustment to the cloud cover forecast provided by the U.S. National Weather Service provide accuracy improvement, methods that incorporate day type dependency provides even further improvement in forecast accuracy.

Keywords : day types, forecast methods, National Weather Service, sky cover, solar energy
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