

Predicting Energy Production from Solar Power Systems

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Predictions of energy production are essential throughout the process of proposing, designing, financing, connecting and operating solar power systems. The desired accuracy and temporal resolution of predictions generally increase throughout this process, from relatively coarse estimates of annual energy during the proposal stage to accurate predictions on hourly intervals during operations. Statistical sciences find application across all of these time scales. In this talk, I will outline how predictions are currently made, describing where and how statistical methods are applied, and comment on the accuracy of these predictions. I will identify opportunities for improving the prediction process by application of statistical methods and research questions that have arisen from our work on prediction methods.