

Nimbus AI

Honolulu, HI

Problem

Intermittent solar generation limits adoption; forecasting solar production is necessary in the transition to a renewable and energy-independent future.

Long-term forecasts are particularly important for strategic planning and insurance companies that want to price their products accurately.

Solution & Approach

We combine satellite-based instrument data with climate data to produce physics-based long-term predictions.

We use robust statistical tools to diagnose correlations between solar irradiance and climate patterns which inform forecasts.

Forecasts can be generated for any location in the US and the Pacific and for any time horizon, from seasonal to decadal.

Target Customers

1. Solar insurance companies and financial institutions.
2. Solar project developers, investors, and utilities who are planning new power plants
3. Armed forces that need to deploy troops.

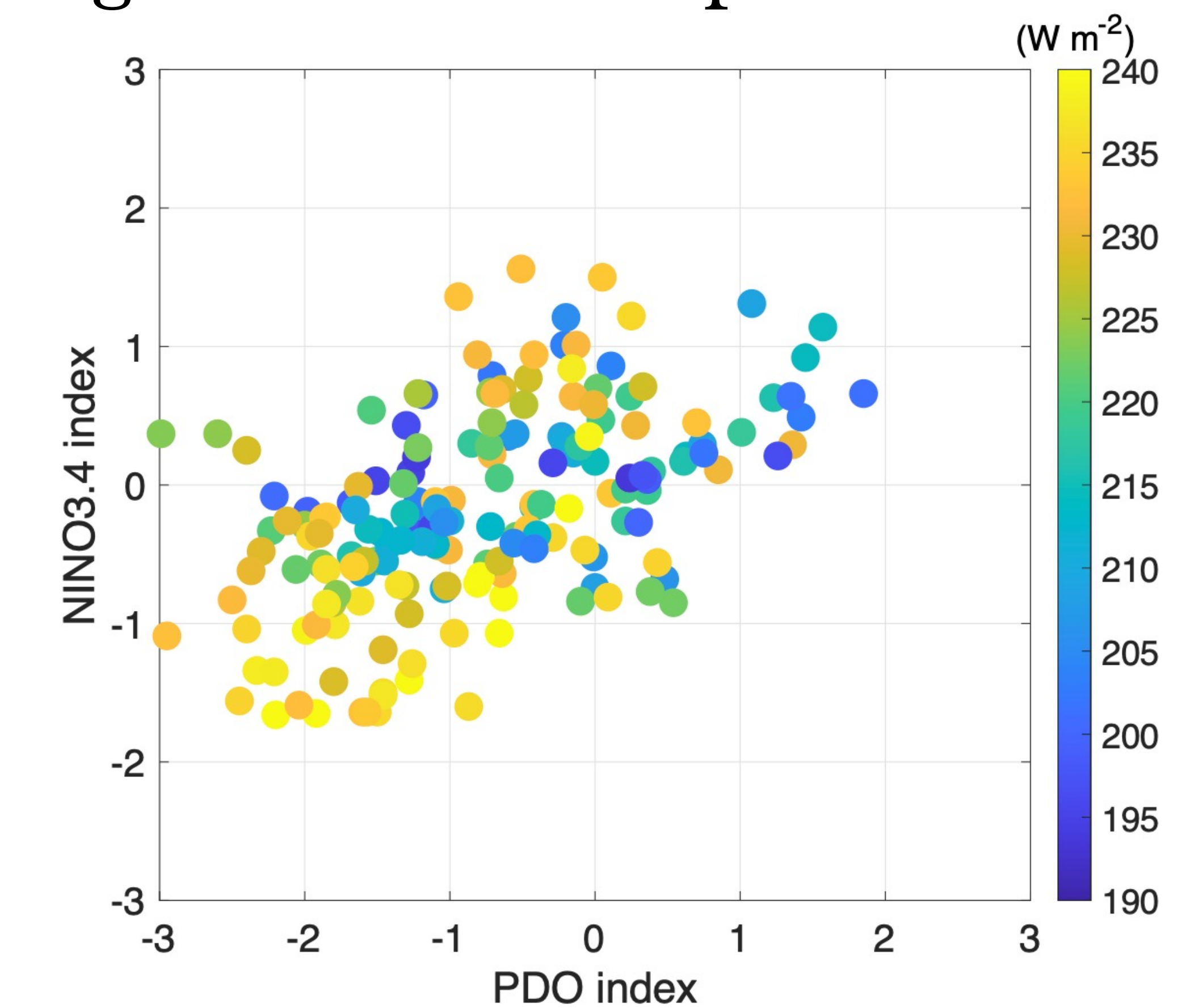
Data-driven long-term solar forecasting:

- Solar insurance and finance
- Geographically flexible
- Based on state-of-the-art climate model data
- Robust & Inexpensive



Why it works

Data shows that significant variations of daily-averaged solar irradiance can be tied to large-scale climate patterns.



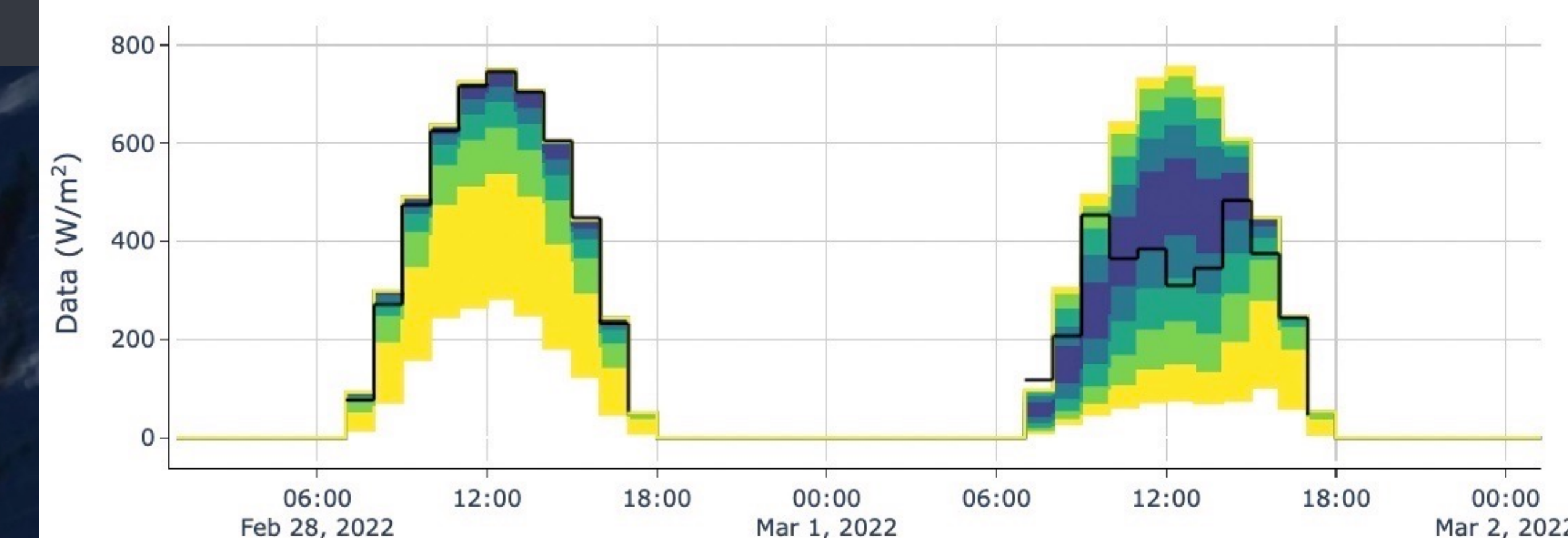
Daily-averaged solar irradiance in Hawaii since 1990 shown as a function of two large-scale climate patterns.

Team Previous Successes

Nimbus AI was a winner of the American-Made Solar Forecasting Prize 2022



The **only competitor** to beat baseline at all 10 climate-diverse test sites in the US evaluated during the competition.



Sterling, VA day-ahead clear sky and partly cloudy forecasts with realized irradiance