method discussed below and in reference [10]. Figure 2 shows the distribution and averages of the MAE errors for all forecast times.

Our WRF models outperformed a clear sky forecast by approximately 20% on day 1, 10% on day 2, and 15% on day 3. The curious observation that the day 3 forecast error is smaller than the day 2 forecast error is explained by the fact that not all models successfully run on all days and that clear days are significantly easier to forecast than cloudy days. Coincidentally, clear sky conditions were overrepresented in the models that ran out to 3 days.

TABLE I
MEAN ABSOLUTE ERROR (W/m^2) OF GHI FORECAST (3 MIN. BINS)

Day	6Z-NAM	6Z-GFS	6Z	12Z-NAM	12Z-GFS	12Z	Mean	Clear sky
1	65.3	61.1	63.3	63.1	59.1	61.1	63.2	84.6
2	79.8	73.4	77.0	70.5	68.0	69.3	73.9	84.6
3	70.2	70.0	70.1	--	--	--	70.1	84.6

TABLE II
NORMALIZED MEAN ABSOLUTE ERROR (W/m^2) OF GHI FORECAST (3 MIN. BINS)

Day	6Z-NAM	6Z-GFS	6Z	12Z-NAM	12Z-GFS	12Z	Mean	Clear sky
1	.101	.091	.096	.097	.090	.094	.094	.125
2	.120	.110	.115	.106	.102	.104	.109	.125
3	.105	.105	.105	--	--	--	.105	.125

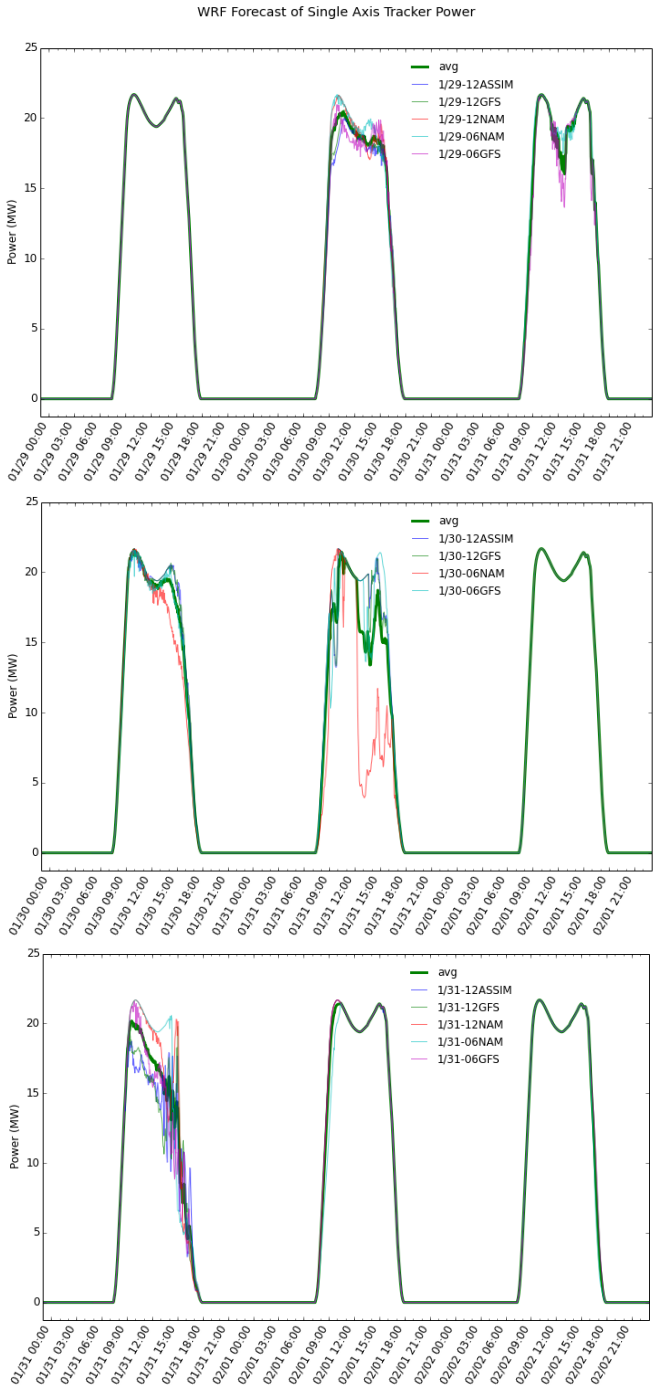

Fig. 1. WRF forecasts of single axis tracker PV power production for up to five different daily model runs (thin lines) and their averages (thick green). The top image shows model runs starting on January 29, 2014, the middle image shows models starting on January 30, and the bottom image shows model runs starting on January 31 so that one can observe how the forecast develops as new initialization data becomes available. The time axis is in MST. Figure 3 shows the satellite-derived irradiance on the variable afternoon of January 31.