

EE 491 Weekly Report MAY15-21 Week 7 (10/14/14-10/21/14)

Advisors: Venkataramana Ajarapu

Client: Venkataramana Ajarapu

Members (roles):

- Daoxi Sun- *web master*
- Riley O'Connor- *team leader*
- Trevor Webb-*communication leader 1*
- Shihao Ni – *web master*
- Xiaokai Sun- *communication leader 2*
- Ben Ryan- *concept holder*

Project Title: Hybrid Solar Wind Generation System

Weekly Summary

The main goal this week was to advance the model of our design in Simulink. The solar team and wind team each began separate models, and once each model simulates the way we want it to the two will be put together for one comprehensive model.

Each group made progress with the simulations from last week to this week, but neither model is complete yet.

The entire group was able to meet with our advisor and his grad student. They looked over what we had done so far and gave us some helpful advice for trouble shooting our models and checking each step as we progress to ensure that everything is working properly.

Both teams are nearing model completion.

Meeting notes:

General Notes

- I. Present solar material and wind material to our advisor
- II. Focus on trouble shooting our simulations
- III. The Solar team must check inputs and outputs throughout the simulation to make sure the expected results are obtained.
- IV. The Wind team must . . .

10/2 Group Meeting with Advisors

Duration: 60 min

Members Present: All

Purpose and Goals:

Present relevant background information over our project to both our advisor and our fellow group members. Both the solar and wind teams now have Simulink models, but were not complete models. The advisor and his grad student were able to give guidance for progressing with the models.

Achievements:

Both groups were struggling with simulation errors, and both largely benefited from the advice of using a step-by-step approach to simulating and constantly verifying results along the way.

The solar team was able to successfully modify and predict P-V input and output as well as boost the voltage with a boost converter and apply the inverter to create an ac voltage/current at the output. Now that each individual component seems to be operating as desired, the solar team must be able to check inputs and outputs at all points along the design to ensure that the model is behaving as expected.

The wind team was able to solve the problem that made the motor and generator not to work well. After this, the models of the simulation of the power supply will be put back to the previous design connected with the power bridge and the load.

Pending issues

1. Simulating the solar generation and wind generation aspects in Simulink.
2. Modeling based on different conditions.
3. Combining the two models into one comprehensive model

Plans for next week

1. Wind team: (Ben, Xiaokai, Shihao) will meet to continue work on wind simulations
2. Solar team: (Riley, Daoxi, Trevor) will meet to advance work on solar simulations
3. Each team will also develop results that can be presented at our next meeting with our advisor and his grad student. The individual solar and wind simulations should be largely completed by our next meeting with our advisor.

Individual Contributions (this week)

Daoxi Sun: 5

- Attended weekly advisor meeting
- building website for senior design project
- helping build MPPT, low-pass filter, and boost converter for solar part

Riley O'Connor: 5

- Worked on Solar Simulink model
- Attended weekly advisor meeting

Trevor Webb: 5.5

- Worked on Solar Simulink model
- Attended weekly advisor meeting
- Updated information in the weekly report

Shihao Ni: 8

- Attended weekly advisor meeting
- Worked on wind simulation
- Adjust motor in simulation
- Asked graduate student for help
- Administrate the website

Xiaokai Sun: 8

- Attended weekly advisor meeting
- Researched Matlab Simulink models and wind generation components
- Worked on wind simulation
- Adjust motor in simulation
- Editing weekly report.

Ben Ryan: 9

- Researched Matlab Simulink models and wind generation components
- Attended weekly advisor meeting
- Make the generator to function well

Total contributions for the project

Daoxi Sun (24 hr)
Riley O'Connor (28.5 hr)
Trevor Webb (27 hr)
Shihao Ni (22 hr)
Xiaokai Sun (22 hr)
Ben Ryan (23 hr)