

EE 491 Weekly Report MAY15-21 Week 8 (10/22/14-10/29/14)

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. 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 struggling with de-bugging model simulations.

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 remodel the way they are generating their input.
- 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.

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 identify some problem areas with how the input is generated, and those areas should provide a clue to strange output results from the boost converter.

The wind team was able to get the motor and generator to function well. The part of the power bridge gives a reasonable output. Also, the wind team is starting change the motor and voltage source to the wind turbine with mechanical connection.

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: 7

- Attended weekly advisor meeting
- Start working on design document
- Redo the MPPT
- Work on boost converter

Riley O'Connor: 7

- Worked on Solar Simulink model
- Attended weekly advisor meeting

Trevor Webb: 7.5

- Worked on Solar Simulink model
- Attended weekly advisor meeting
- Updated information in the weekly report
- Started work on the design document

Shihao Ni: 8.5

- Attended weekly advisor meeting
- Connect the AC-DC-AC converter and test.
- Try to use wind turbine to replace the voltage source and motor

Xiaokai Sun: 8.5

- Attended weekly advisor meeting
- Connect the AC-DC-AC converter and test.
- Try to use wind turbine to replace the voltage source and motor
- Editing weekly report.

Ben Ryan: 8

- Researched Matlab Simulink models and wind generation components
- Try to build up the boost converter.
- Attended weekly advisor meeting

Total contributions for the project

Daoxi Sun (35 hr)

Riley O'Connor (35.5 hr)

Trevor Webb (34.5 hr)

Shihao Ni (35 hr)

Xiaokai Sun (35 hr)

Ben Ryan (36 hr)