Jonah Golden

Final Project Proposal

2015-11-02

**Howe Sound Wind Projections**

**Introduction**

Using historical wind data from the Squamish oceanfront, I plan on simulating wind turbine power generation data. Squamish, the wind surfing capitals of Canada has long been known to have a windy waterfront, especially in the summer. Using 7 years of wind data from this waterfront, this projects aims to simulate the potential for wind power generation (Carolin Mabel & Fernandez, 2008). What does the data look like? Explicitly state your research question and hypothesis.

**Methods**

I plan to use wind turbine generation data combined with wind speed and direction data to simulate power output of wind turbines on the oceanfront.

(Laher et al., 2014). What exactly are you planning to do? Are you going to compare windspeeds at different geographical locations? Look at how windspeeds vary throughout the year? Characterize these and other aspects of wind behavior to predict which type of wind-turbines would be most efficient here?

**Expected Outcomes and Significance**

I expect to find fairly high wind outputs depending on the sizes and models of wind turbines simulated. If power output projections are high, this could be significant for potential future wind turbine installations in Squamish. This research could lead to future research of other locations in Squamish that may be even windier such us ridgetops (Thorarinsdottir & Gneiting, 2010). Why? How would this research lead to this?

This very terse proposal does not clearly illuminate what exactly you want to do. You had an extra 300 words you could have used to make this more clear. In the future, try to use the majority of the space provided, and take a look at the grading rubric.

**References**

Carolin Mabel, M., & Fernandez, E. (2008). Analysis of wind power generation and prediction using ANN: A case study. *Renewable Energy*, *33*(5), 986–992. http://doi.org/10.1016/j.renene.2007.06.013

Laher, R. R., Surace, J., Grillmair, C. J., Ofek, E. O., Levitan, D., Sesar, B., … Kulkarni, S. R. (2014). IPAC Image Processing and Data Archiving for the Palomar Transient Factory. *Publications of the Astronomical Society of the Pacific*, *126*(941), 674–710. http://doi.org/10.1086/677351

Thorarinsdottir, T. L., & Gneiting, T. (2010). Probabilistic forecasts of wind speed: ensemble model output statistics by using heteroscedastic censored regression. *Journal of the Royal Statistical Society. Series A (Statistics in Society)*, *173*(2), 371–388.