Copied from project proposal.

i) Title : The interconnectivity of weather variables in the Garibaldi highlands. Does one lead them all?

ii) Abstract

iii) Introduction

The collection of weather and climate data has been around since the early 17th century when Central England Temperature Records first started to record daily high and low temperatures. (refrence) Most people have used this historical data to produce large complex weather and/or climate simulators. The use of such large historical data allows simulators to produce statistical guesses on future weather or climate systems. This procedure of you using the passed to predict the future is common for any simulator. Some of the simulators have specific purposes like generating daily weather to study climate change in the future. (Kilsby, C).

Rajagopalan, B

The difference between weather and climate is an important aspect to define because of the focus of this project will be on the weather data in specific location in Squamish BC. Weather is what conditions of the atmosphere are over a short period of time, and climate is how the atmosphere "behaves" over relatively long periods of time (reference nasa).

This coastal rainforest region of Squamish has a unique weather system that is not common around the world. The unique weather is due to Squamish’s location at the end of a sound and that the area around Squamish is surrounded with mountains. Both of these features have a large influence on weather patterns of the region and cause the weather to be unpredictable. This unpredictability makes the study of weather in this area very interesting. The data that this project will use comes from the Quest University Weather Station. This station has the capacity to measure and record temperature (**°C)**, relative humidity (%), precipitation (mm), wind direction (**ø)**, wind speed (m/s), and gust speed (m/s).

The approach of studying only new data and not using historical data over many years will bring some inaccuracies for freak weather days (Rajagopalan , 1999). This will allow us to specifically see the reaction of variables. Considering I’m not looking at historical trends but at specific relationships of variables I do not think that historical data will influence my outcome and therefore will not hurt my scientific integrity if not used.

The aspect of weather that I would like to study is the correlation between measured variables and how one may drive/effect another. Even though others have already answered this question, I believe it is important to see if my data set will come to have a similar conclusion. PAST RESEARCH AND INTRODUCE WEATHER VARIABLES

I hypothesize that specific groups of variables will be connected. The variables that I predict are related are wind speed and gust speed, Wind direction and time of day, humidity and precipitation. The last variable of temperature will have strong effects on all the variables either increasing or decreasing there effect.

My expectation of testing my hypothesis is that we will see relationships between variables. Although, I believe we will find some relationship between two variables I do not think it will be a simple linear relationship. WHY? EXPLAIN

If I am able to find direct relationships between two variables MORE CLEAR CONNECTIONS REFERENCE OUTSIDE PAPERS AND EXPERIMENTS it will allow future researchers to only collect data on one variable. They would then be able to use mathematical analysis or a computer program/ simulation to reverse the collected data and find the other variables(Richardson,1984) . This would make it cheaper and easier for data collection. Also this would make that data collected half experimental based and the other half simulator based data. This data creation/collection is already preformed by many different weather simulators.

This research could lead us to more correlations between different variables in weather. Also this study can lead us to create a smaller weather simulator for this specific area. The creation of weather simulators is actually very common because area specific simulators are much more accurate then ones meant for global use (Kilsby, 2007). This is because the surface type and environment around the system influences the variables dramatically and directly.

iv) Methods (code should not be included, but instead a link to the Github repo must be provided)

I plan to test my hypothesis by creating a computer program that will decipher trends between all variables and the selected pairs of variables that I predict are related. I will visually demonstrate this with graphical representations of variables reacting to each other highlighting specific areas of interest. However, I will also seek to find numerical or mathematical evidence of my theories.

v) Results

vi) Discussion

vii) References

<http://www.bbc.co.uk/blogs/climatechange/2009/03/since_records_began_a_brief_gu.html>

http://www.nasa.gov/mission\_pages/noaa-n/climate/climate\_weather.html

Kilsby, C., Jones, P., Burton, A., Ford, A., Fowler, H., Harpham, C., . . . Wilby, R. (2007). A daily weather generator for use in climate change studies. Environmental Modelling & Software, 1705-1719. Retrieved November 1, 2015.

Rajagopalan, B., & Lall, U. (1999). A k -nearest-neighbor simulator for daily precipitation and other weather variables. Water Resources Research Water Resour. Res., 3089-3101. Retrieved November 1, 2015

Richardson, C., & Writght, D. (1984). A Model for Generating Daily Weather Variables. WGEN. Retrieved November 1, 2015

* Research question, hypothesis and conclusions should all be clearly stated.