Natural Hazards Engineering Research Infrastructure (NHERI)

2019 REU – Research Opportunities for Undergraduates

Literature Review,
Annotated Bibliography,
& Publication

Summer 2019

Overview

- Provide research project overview
- Discuss literature review & annotated bibliography
- Sample publication: Introduction
- Review upcoming deadlines & events (Denver)

Research Project Overview

- Name
- Mentor
- Research Project Description
  - Research project title
  - Research question
  - Goals & activities
  - Methods used

Literature Review

- Collect scholarly publications for your topic
  - ✓ Use the article provided by your faculty mentor
  - ✓ Follow citations from the article or look/ask for others
- Read your publication and highlight important details
  - ✓ Use Acrobat Reader for electronic files (example)
- Summarize the article
  - ✓ How can you use it in your project/research?

Purpose of the Literature

- Citations add credibility to your paper

- Determine the PURPOSE of the literature/citation. Does it provide:
  - Background of the study/historical event/natural hazard?
  - Context of the study?
  - Need for the study?
  - Methodologies?
  - Results?

Annotated Bibliography

https://www.youtube.com/watch?v=sesnEcikxT8

Let's watch together!

Annotated Bibliography

An annotated bibliography contains:

- Citation (in the appropriate format)
- Summary (include purpose, study, method(s), results)
- Purpose (how you might use the article's contents in your research paper)

Annotated Bibliography - Example

Citation in ASCE format

B. Yu, A. G. Chowdhury, and F. J. Masters, "Hurricane Wind Power Spectra, Cospectra, and Integral Length Scales," *Boundary-Layer Meteorology*, vol. 129, no. 3, pp. 411–430, 2008.

Summary of the article

This paper concludes that the turbulent energy at lower frequencies is considerably higher in hurricane than in non-hurricane winds. The authors used the FCMP data to calculate turbulent spectra cospectra, and intergral turbulence scales of tropical cyclone and hurricane winds over coastal areas under neutral conditions. The authors found that normalized power spectra of longitudinal, lateral and vertical hurricane wind components have significantly more energy at lower frequencies than other power spectral model proposed by other investigators. Even though uw cospectral values over two surface regimes were compatible, the value of power spectra of longitudinal and lateral wind components over the sea were higher than those over terrain. The paper also presents other important findings on longitudinal length scale and the ratio between the largest to the smallest value of the turbulence parameter. In addition, the authors discussed the advantages and recommended improvements of FCMP program.

How the information can be used in your research project

This paper introduces many important concepts beneficial to my project such as fundamental turbulence on the micrometeorological scale, process of hurricane wind data measurements, and basic mean wind speeds, estimation of integral length scales (introduced in my class), and estimation and variability of power spectra and cospectra. Especially, the last concept is new to me and I think it's closely related to power spectral density function, one of the major components of my project.

D. Nguyen (REU, 2017)

Deliverables & "Homework"

Turn in the assignments on Moodle by *Wednesday, June 12*:

- ❑ **Mentor/Goal Form:** Upload the file to Moodle.
- ❑ **Annotated bibliography for literature review:** Citation, summary of the article, how you plan to use the article in your research paper. Include at least 3 articles. The more, the better. This is the start of your organization for the literature you will use in your final paper.
- ❑ **Timesheet:** Record research activities: Mon, 6/3-Sun, 6/9.
- ❑ **Reflection 2:** Reflect on the questions for Week 2.
- ❑ **Review the introduction of your sample paper:** Read the intro and determine what elements it contains. Come ready to share your file and findings June 13th.

HINT for "Homework"

- **Re-read the introduction in the paper(s) provided by your mentor. Find how they (and if they) give information about the following topics of their research study:**
  - Background
  - Problem statement
  - Purpose
  - Research question(s)

Presentation Opportunity

- Encourage everyone to attend the Researchers Workshop in University of Colorado

- You will present a poster with a team, your faculty mentor, or individually.

- Ask your mentor for approval to attend from Tuesday, July 16-Thursday, July 18.

- Notify Dr. Karina Vielma about your interest to attend by Friday, June 14th. We will book your flight and hotel.

Questions?

Please feel free to contact me if you have any questions or concerns. We are here to help all REU students have the best summer research experience possible.

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