

# Differences between extreme precipitation and flooding

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## Abstract (Limit between 150-200 Words):

Flooding is a major risk in the United States, and the role that extreme precipitation plays in flood events is not clearly known. In recent years, flood occurrences have caused enormous damage, both in coastal areas and inland. This can be a result of increases in precipitation, snowpack, storm surge height, and others. Using a database of extreme precipitation events (SHPE), the student will conduct a qualitative and quantitative analysis of flooding or other effects associated with the events. The student will compare spatiotemporal flooding data to SHPE data and quantify the relationship of timing between coinciding events. In addition to this, the student will investigate incidences where there was no flooding, to better quantify the effects of extreme precipitation. Both case studies and statistical analysis may be employed. Depending on the results and progress of the student, the analysis can include drainage basin data as well.

## Datasets:

Remote Sensing data, Socioeconomic data, etc.

## Computer Skill

Summer Intern will work with either Python or Matlab, Excel, PowerPoint, and Word

Student is expected to be self-driven to complete tasks and an efficient communicator

## Benefits to students:

Summer Intern will benefit from learning:

- basic scientific computing skills, either in matlab or python
- familiarity with manipulating satellite datasets
- understanding of precipitation triggers and atmospheric processes associated with flooding