**BACKGROUND OF THE STUDY**

The [Philippines](http://www.dw.de/philippines-an-overview/a-17217426)has suffered from an inexhaustible number of deadly typhoons, earthquakes, volcano eruptions and other natural disasters. This is due to its location along the Ring of Fire, or typhoon belt – a large Pacific Ocean region where many of Earth’s volcanic eruptions and earthquakes occur. **[Wingard and Brändlin, 2013].**  Philippines is also known to be the most exposed country in the world to tropical storms **[Time Magazine, 2013].**There are approximately twenty tropical cyclones that enters the Philippine area of responsibility **[Cruz, 2016]**. We also experience monsoons here in the Philippines. We have two classifications of monsoon here in the Philippines, the *amihan* refers to the season dominated by the trade winds, which are experience in the Philippines as cool northeast wind. It is characterized by moderate temperatures, little or no rainfall, and a prevailing wind from the east. The other is *Habagat* also known as south west monsoon it is characterized by hot and humid weather, frequent heavy rainfall and prevailing wind from the west**. [James 2004].**

To us, Filipinos, it is a part of our yearly struggle for us to experience monsoons and typhoons. Monsoons and Typhoons have a big effect in our lives. Bridges, roads mobiles and house can be destroyed; people can become homeless or worse.

**STATEMENT OF THE PROBLEM**

The study aims to develop a system that can predict a flood hydrograph depending on drainage area, rainfall, channel slope and forested area value of a given area by using linear regression algorithm

It aims to answer the following questions:

1. What is the accuracy of the system in predicting a flood hydrograph of an area with given independent variables:
   1. Drainage area
   2. Rainfall
   3. Channel slope
   4. Forested area value
2. Is there significant difference between the real flood hydrograph data of an area and the predicted data of the system?