

## **ABSTRACT**

The floods that happen in Indonesia are generally caused by the combination of the rainfall characteristic and basin characteristic. An accurate method that can be used as orientation in seeing the response of a basin to the danger of flood is by using unit hydrograph. The analysis that is used all this time is by Synthetic Unit Hydrograph which is influenced by a certain method.

The aim of this research are to develop measured unit hydrograph at Way Kuala Garuntang Basin and Way Simpang Kiri Basin, and to compare the result of measured Unit Hydrograph with the Syntetic Unit Hydrograph which often used nowadays (Syntetic Unit Hydrograph Snyder, Gama I, and Nakayasu).

The measured unit hydrograph can be developed at minutes time step which is smaller or bigger (5, 10, 15, 30, 45, 60, 120, 180, 360 and 720 minutes), meanwhile Syntetic Unit Hydrograph can only be at hours time step. Syntetic Unit Hydrograph that come close to measured data for Way Kuala Garuntang Basin and Way Simpang Kiri Basin are Syntetic Unit Hydrograph Nakayasu Method which flow of characteristic coeffisien 0,7 and 0,4. Syntetic Unit Hidrograph Snyder and Gama I method are not suitable to be used as an artificial approach for both basin. It is possible caused by the characteristic coeffisien and the basin condition that are used are not suitable for both of basin.