

# A Parameter Analysis Nakayasu Synthetic Unit Hydrograph and Collins Method.

- **Author(s):** Acep Hidayat ,Lilly Montarcih Limantara ,Widandi Soetopo ,Dian Sisinggih4
- **Abstract:** The limited availability of hydrograph data is an obstacle for water building planning. This obstacle makes HSS models provide considerable benefits for water building planning. Ideally, each watershed (DAS) has a Unit Hydrograph with its characteristics. The research was conducted to observe the hydrograph characteristics in all watersheds in the Province of South Sulawesi. It was completed to model the Alpha equation with the influence parameters of Watershed Area (A), River Length (L), River Basin Slope (S), Form Factor (FD), and Time Concentration (Tg). The Watershed Form Factor influences the Alpha value, so it is beneficial in planning water structures. The modeling analysis used is nonlinear regression because it has different data variants based on the homogeneity test performed. It is expected that the resulting  $\alpha$  value can match the actual conditions in the environment to impact a more efficient design.
- **Keywords:** hydrograph data, efficient design, Form Factor, Form Factor