MANUAL FOR USING GUI FOR BACKWATER CURVE MODEL

This manual describe how to use graphical user interface (GUI) for Sugawara hydrological model.

Getting started

- When the script for GUI is opened in the Visual Studio code administrator, it has all the necessary files and libraries required to run the code in the web browser.

- The code is ran by by typing '*bokeh serve samp1.py –show*' in the terminal. Then it opens in the web browser or

- '*bokeh serve samp1.py --allow –websocket*' to allow access in other computers. Origin: 5006 and this makes it to be accessed publicly when the IP address is shared or

- Using the opener in the folder called samp1.

- GUI display the parameters, loaded data from .asc file in form of table, measured error, calibrated parameters and the graphical representation of the results (three graphs).

- There are four buttons and one input section.

How the Buttons work

- First is to type the name of asci file to be uploaded in the system (Hint: '*output.asc*').

- Click *Load Data button to load the data.* This action plots rainfall-Evaporation plot and Qrec curve on the observed flow-simulated flow plot.

- Click *Load Parameter File* button to upload a text file called para in the system.

- Then click *Run Model button* to run the first simulation. This action plots the simulation curve on the observed flow-simulated flow plot and also the state plot to show the amount of water in the reservoirs.

The error is computed and displayed in the error measurement table. The error is always big in the first run.

- Click *Calibrate* button to calibrate the simulated results. This is the second run of the model. On click, simulated plot adjust, state plot also changes, error is recomputed, and calibrated values are displayed just below the calibration button.

The Sugawara model is calibrated.

Summary of Button operation