[11:32 PM, 5/13/2020] 🤪🇫🇷: Title : Analysis and production of time series.

Description:

The objective of this project is to analyse time series and create a model of time series, and then to apply the model to a different situation to obtain similar time series.

The work is split in 5 steps.

Step 1: Download from the website of Vigicrues (sorry, only in French), temporal series of water levels during flooding episodes. The target river is “Nartuby”, and the flood event is June 15th, 2010, as an example.

https://www.vigicrues.gouv.fr/niv3-station.php?CdStationHydro=Y523501001&CdEntVigiCru=22&GrdSerie=H&ZoomInitial=1&CdStationsSecondaires=

Visualize the data downloaded (in the same way than Vigicrues).

Step 2: Extract automatically, for the time series, the characteritics allowing to generate the same synthetic data (i.e. create the model of the time series).

Step 3: Generate similar time series using different parameters, such as sampling rate (starting with the ones of Vigicrues, 15 minutes, and decreasing or increasing), water level of the flood, …

The generated time series will be organized as lines, where each line contains: date and time, water level, speed of water flow

Step 4: Transpose the times series on another river (for instance La Pique : https://www.vigicrues.gouv.fr/niv3-station.php?CdStationHydro=O004402001&CdEntVigiCru=25&GrdSerie=H&ZoomInitial=1&CdStationsSecondaires=)

Step 5: Visualize the resulting water level graph (in the same way than Vigicrues).

The code should be modular, easy to extend, parameterizable.

The expected deliverable is :

- Python code developed in

- document for developer and user of the code