

Smart Water Management



**Time Series Analysis for Pruduction
Decision Making processes**

H&S Projectwork 2025

Context

As it is easy to imagine, a water supply company struggles with the need to forecast the water level in a waterbody (water spring, lake, river, or aquifer) to handle daily consumption. During fall and winter waterbodies are refilled, but during spring and summer they start to drain. To help preserve the health of these waterbodies it is important to predict the most efficient water availability, in terms of level and water flow for each day of the year.



each **waterbody** has such unique characteristics that their attributes are not linked to each other. This analytics competition uses datasets that are completely independent from each other. However, it is critical to understand total availability in order to preserve water across the country.

Each dataset represents a different kind of waterbody. As each waterbody is different from the other, the related features are also different. So, if for instance we consider a water spring we notice that its features are different from those of a lake. These variances are expected based upon the unique behavior and characteristics of each waterbody.

Data

The datasets extracted and simulated from Acea Group challenge [1] deals with 4 different types of water bodies, named:

- Aquifier
- Lake
- River
- Water Spring

The data comes from a collection of features coming from different locations (mostly regarding rainfall and temperatures)



Goals

