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## The Music of Water

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Visualizing hydroclimatic data through maps, curves, diagrams or any other graphical means is an integral part of most scientific analyses. While less frequently attempted, it is also possible to listen to the data through the process of sonification; and rather than just making sounds, why not trying to make music out of them?

Overall, the process of transforming a dataset into music involves two main steps. The first one is to define a mapping between data values and sound properties (typically, the volume or the pitch of notes). This is very similar to the approach used to visualize data (think about using the size or the color of a symbol to represent data). The second step is to arrange the raw result of this first sonification step in order to make it 'sound good' and -hopefully- transform it from sound to music.

This poster will present a few musical pieces created from hydroclimatic data we use as part of our scientific activity, such as:

- the most basic time series used in catchment hydrology (<https://vimeo.com/481648928>)
- the impact of El Nino on precipitation (<https://vimeo.com/440621263>)
- an exploration of the Dry Valleys of Antarctica (<https://vimeo.com/653705727>)
- an ubiquitous statistical tool (<https://vimeo.com/532773848>)
- and more (<https://globxblog.inrae.fr/>)

Data sonification can be looked at from many interesting angles. From a scientific perspective, it is another way to extract information from data. From a musical perspective, it is a device to create the backbone of musical pieces. From an education and communication perspective, it is an engaging starting point to present scientific concepts or results. In addition, the process of sonifying data is a great way to learn new skills in many topics, including signal processing, musical theory or computer science, just to name a few.