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# Prediction in ungauged basins : one piece in the hydrological puzzle.

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Hydrology is like a puzzle. However, instead of being well cut pieces with well defined edges, the pieces of the hydrological puzzle are vague, and additionnaly many are missing. The hydrological puzzle is a fuzzy, stochastic one.

The problem of the prediction in ungauged bassins can be comparable to the prediction of the final colour at a given location in the puzzle. Such a prediction can be best made combining what we do know (the puzzle has four edges, water balance must be closed) and that we know just approximately or what is subject to change category with expertise (what is the colour of a given detail? What is the dominant process in a given area and given conditions?).

Unlike in the game, the hydrological puzzle is never closed. Yet the more the construction of the puzzle is advanced and the more the partial knowledge we have has been organized, the more the uncertainty decreases.

The PUB activity in hydrology will be more credible and more consistent with local observed hydrological features if we take into account all the relevant information, like in an assimilation process. This suggests that the best way of making progress in PUB is to first look after the construction of some realistic picture of the area considered as an hydrological puzzle. This stepwise approach seems indeed much more realistic and safer than trying to achieve directly a precise prediction of any hydrological variables at a given location.

The talk will be examplified from studies located in the meso-scale catchment of the upper Saône River, France.