



Perspectives for the use of big data in environmental planning and management

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Scientists often experience difficulties in handling large data sets in many areas, including hydrology. Technical problems are often the main reason of discussion, but relevant implications are also experienced regarding the underlying philosophy, theory and working relationship with colleagues. In fact, a paradox emerges when dealing with big data: the large size of the available information, instead of exciting scientists for the related enormous opportunities, often brings them to magnify the inherent problems, by thinking only that these data are beyond control.

This talk will provide a perspective on the use of big data in hydrology and will outline the fascinating ways forward that extended information may open for hydrological research. Moreover, an innovative experience will be presented that is being carried out by 5 European research groups in hydrology. These latter are setting up a virtual laboratory to make big hydrological data available, along with open software for performing data analysis. Particular attention will be dedicated to the opportunities offered by comparative hydrology in process understanding, as well as data visualisation. Finally, the emphasis will be placed on the new form of cooperative research that may arise when sharing data and modelling approaches.