

Over 100 years of climatic and hydrologic variability of a Mediterranean and mountainous watershed: the Durance River

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Abstract This paper presents a methodology to build long climatic and hydrologic time-series, based on the downscaling of large-scale climatic data and local observations. This method has been applied on the Durance watershed, on which long historical daily streamflow series have been recently brought to light. These long series allow a validation of the reconstruction method, which show very promising performances on both calibration and validation periods. Finally, 22 1900–2010 streamflow series have been built and used to illustrate the hydrological variability on the Durance watershed over the last century.

Key words hydrological variability; historical time-series; streamflow reconstruction; analogues method; Alps