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Hydrological prediction under climatic non-stationarity

It has long been recognised that the assumption of stationarity is untenable in hydrology. Use of this assumption in climate change impact studies can lead to large errors in estimating changes in hydrological characteristics into the future. This is particularly true (and important) when considering how streamflow may change under a warmer, drier, enhanced carbon dioxide environment. This presentation will discuss the issues related to prediction of hydrological response under new climatic conditions. It will describe a number of case studies which may provide insight into how hydrologic response may vary into the future. Finally, it will conclude with an assessment of how rainfall-runoff models may need to be modified in order to capture these shifts in the hydrologic functioning of catchments.