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## Multi-steps SETAR predictors in the analysis of hydrological time series

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In recent years, the presence of non-linear features in hydrological time series has been point out both in the statistical and hydrological literature. The complexity of some physical phenomenon, such as the rainfall-flow process, seems to need statistical methods that take into account the non-linearity. Different approaches to the statistical analysis of the rainfall-flow process have been proposed. The inherent non linearity of this relation, typically due to the effect that ground moisture in the catchment has on the system, can be adequately explained by regime switching models that often show encouraging results in terms of fitting (e.g. Tong, 1990; Todini, 1996; Amendola and Storti, 1999). However the good fitting results do not guarantee an equal good forecasting performance. The aim of the present contribution is to show how these nonlinear models perform when the interest is extended to the prediction problem. In particular, after the presentation of some theoretical results on nonlinear predictors, their forecasting ability in the analysis of some river flow data are shown.

## References

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