This paper presents a precipitation and streamflow forecasts verification study based upon an ensemble forecast system adopted by FUNCEME during the last two years. The ensemble precipitation forecast system consists of results of a combination of regional and global atmospheric models with two different parameterization schemes of the convection process. The Regional Atmospheric Modeling System (RAMS) and the Weather Research and Forecasting System (WRF), using two different parameterization schemes for convection, are fed by two global models, the Global Forecast System (GFS) and one developed and operated by CPTEC-INPE, to provide six different precipitation forecasts. The ensemble streamflow forecasts are obtained by employing each member of the ensemble precipitation forecast as input data to a lumped conceptual hydrologic model.

The analysis focuses on precipitation and streamflow forecasts for up to 72 hours lead times for specific sites over the state, mainly at reservoirs and streamflow gauges. The verification methods employed here are based on categorical precipitation and streamflow described by contingency tables based on different thresholds.

This paper also compares the performance of each member of the ensemble as well as of the ensemble mean, and discusses the results obtained by the forecast system when forecasts outputs are corrected by a bias-correction procedure. When properly corrected by a statistical model, the forecast system performs better than a persistent model, however, its quality deteriorates as both the lead time and the threshold increase.