Response to Reviewers' comments

Reviewer # 1

1. ***Comment:*** *The title of the manuscript is too long. It is therefore advisable to make it more concise.*
   Response: The title has been revised as "Role of Climate Forecasts and Initial Conditions in Developing Streamflow and Soil Moisture Forecasts in a Rainfall-Runoff Regime".

2. ***Comment:*** *Section 2.3 - Authors have mentioned that seven ECAHM4.5 grids that exhibited significant correlations with averaged monthly precipitation were selected. My questions are: 1) Are these grids from the study area or they displaced in relation to study area? 2) At what significance level do they exhibit significant correlation with observed precipitation data? 3) What is the performance of precipitation forecasts from ECAHM4.5 in relation to the lead time?*
   Because of the significant uncertainty in the forecasting of precipitation with GCMs, it is important to demonstrate how well ECAHM4.5 model simulates precipitation. In addition, results of this study don't display clear additional skill that could be gained using precipitation forecasts from ECAHM4.5 over the climatological forcings. I would recommend that the authors provide some information about skill scores of ECAHM4.5 precipitation forecasts before application of downscaling approach.
   Response: 1) Yes. The selected seven ECHAM4.5 grids are covering the entire study area and are also adjacent to each other. The locations of the ECHAM4.5 grids are added in Figure 1a.
   2) The statistically significance level was selected at 95% confidence interval and was computed based on the threshold correlation $[1.96/(n-3)^{0.5}]$, where n denotes data points used in correlation estimation. The spearman rank correlation was computed between monthly time series of: a) spatially averaged precipitation from Maurer et al. (2002) dataset (at 1/8° spatial resolution) and b) each ECHAM4.5 grid over the period of 1957 to 1980. Seven adjacent ECHAM4.5 grids were selected which covered the study area and exhibited highest rank correlations between 0.22 and 0.25 (above significance correlation of 0.12) in the monthly time series.
   3) The performance of precipitation forecasts (rank correlation) from ECHAM4.5 in relation to the lead time is also added as a separate Table #1.

3. ***Comment:*** *Section 3.1.2 - To reduce the dimensionality and eliminate noise, the PCA analysis was applied to predictand and predictor data set. Originally, dimension of predictand data set was 251x54, and for predictor it was 7x54. After the PCA procedure, first six principal components were retained for predictor as well as for predictand. There is no substantial reduction in dimensionality in case of predictor. Originally, it was 7x54 and after PCA applied it was 6x54. Retaining of 2 or 3 first principal components (or keeping original 7 grid points), would be enough for the predictor.*

Response: In case of predictors, all the original seven components are retained (dimension 7x54). In order to keep the dimensions consistent with the PC's of predictands (251 grids, dimension 251x7), 7 PC's are retained instead of 6. This has been added in Section 3.1.2. It has also been verified that retaining 7 original components versus six components after PCA has minimal (statistically insignificant) effect on VIC simulated monthly streamflow.

4. ***Comment:*** *Section 3.1.3 - To make the monthly ECAHM4.5 precipitation forecasts useful in the VIC model, disaggregation of the monthly precipitation into daily interval was done. My recommendation is to present the analysis of errors introduced by temporal disaggregation as authors have done for spatial downscaling.*
   Response: Figure 3b is added which indicates relative root mean square errors due to temporal disaggregation.

5. ***Comment:*** *Ref. p.5237 line 2: Authors point out that ". . . Fig. 4f for the month of October indicates the ability of the forecasting scheme to predict October flows based on the initial conditions prior to May and using the six month ahead monthly precipitation forecast issued in May for the month of October." I don't agree with this statement. According to Fig 4f, the VIC fcst exhibits non significant skill for the month of October.*
   Response: The sentence has been revised as "… Fig. 4f for the month of June indicates the ability of the forecasting scheme to predict June flows based on the initial conditions prior to January and using the six month ahead monthly precipitation forecast issued in January for the month of June" in Section 4.1.

6. ***Comment:*** *Ref. p.5242 line 19: Authors say "During normal ENSO times, ECAHM4.5 precipitation forecasts based streamflow predictions (VIC fcst_norm) issued during the winter season perform better than VIC clim_norm. . ." Accoring to Fig 7, this statement is not so obvious.*
   Response: To clarify this, phrase "at a lead time of 1-month" is added at the end of the sentence. In addition, the figure 7 has been created at higher resolution to distinguish black continuous line (VIC fcst_norm) versus gray continuous line (VIC clim_norm).

7. ***Comment:*** *Ref. p.5234 line 6: It should be "Figure 3", not "Figure 2".*
   Response: This has been corrected.

8. ***Comment:*** *Ref. p.5234 line 11: It should be "Fig. 3", not "Fig. 2".*
   Response: Correction has been made.

9. ***Comment:*** *Ref. p.5238 line 15: It should be "In", not "xIn".*
   Response: This typo has been corrected.

Thanks for the detailed comments!