General comments

In this paper the authors used a multi-site Markovian precipitation generator to generate precipitation for the current climate over the Thur catchment, Switzerland. I found two problems while reading the manuscript: first, the location itself is not of high interest for the scientific community, it is too local and not unique in anyway. Second, and more important, the novelty of the method suggested by the authors it is not clear as there are several well-known multi-site Markovian models that were presented in the literature. I suggest the authors to revise the manuscript, comparing the method they have suggested to the already published multi-site Markovian models, pointing on the benefits of their method.

Specific comments

1. Title – Think about indicating explicitly that the presented precipitation generator is based on Markovian methods.
2. Page 3, 15-29: As the authors have mentioned many WG can be found is the literature. What is unique in the precipitation generator suggested in this paper? I am suggesting that the authors elaborate more about the existing WGs (especially the Markovian based models) and discuss them later on after describing their methods and results. I can suggest some relevant references for the introduction part (not all are Markovian based model):

Kioutsioukis, I., Melas, D., and Zanis, P.: Statistical downscaling of daily precipitation over Greece, Int J. Climatol., 28, 679–691, doi:10.1002/joc.1557, 2008.

Robertson, A. W., Kirshner, S., and Smyth, P.: Downscaling of daily rainfall occurrence over northeast Brazil using a hidden Markov model, J. Climate, 17, 4407–4424, doi:10.1175/jcli-3216.1, 2004.

Robertson, A. W., V. Moron, and Y. Swarinoto (2009), Seasonal predictability of daily rainfall statistics over Indramayu district, Indonesia, Int. J. Climatol., 29(10), 1449–1462, doi:10.1002/joc.1816.

Peleg, N. and Morin, E.: Stochastic convective rain-field simulation using a high-resolution synoptically conditioned weather generator (HiReS-WG), Water Resour. Res., 50, 2124–2139, doi:10.1002/2013wr014836, 2014.

Samuels, R., Rimmer, A. and Alpert, P.: Effect of extreme rainfall events on the water resources of the Jordan River, J. Hydrol., 375, 512–523, doi:10.1016/j.jhydrol.2009.07.001, 2009.

3. Page 4, 6-15: The main goal was to analyze the Thur catchment precipitation statistics and the second goal was to evaluate the multi-site model? Wasn't it the other way around?
4. Figure 1: Please add to the figure scale-bar and coordinates. Maybe even add a background map of Switzerland? Most of the readers will probably find it useful. In the figure caption- define what is a wet day. Wet day intensity – this is the average rain intensity per day I assume?
5. Section 3: This section, and especially subsections 3.1, 3.2 and 3.3.1, should be much shorter. Daily precipitation generators using Markov chains are not new and in fact can be found in many papers and textbooks. In my opinion, it is enough to shortly describe the Markovian method (the transmission and emission matrixes and the bivariate exponential distribution that you have used) while citing the benchmark papers in this fields (e.g., Gabriel and Neumann, Wilks and Wilby). The subsection discussing the multi-site approach that was used in this study (subsection 3.3.2) can also be much shorter- no needs to discuss the Pearson spatial correlation in details and also the calibration procedure (iterations) can be moved to the supplementary section. On the other hand, I think that here is a good place to remind the readers again that there are daily precipitation generators using Markov models for multi-site locations (nonhomogeneous hidden Markov models, for example, see Robertson papers above). Here, or later in the discussion, you must state the differences / benefits of your model comparing to the ones already exist in the literature.
6. Section 3.4.1: What happens when you have a sequence of wet (or dry) days that starts near the end of one month and continues in the next month? Do you refer it as a continuation of the first month or as a two separate sequences? How does your choice influence the model performance?
7. Figure 3: Can this figure be in color? I suggest to set the same limits for both axes. It looks like the model underestimate the wet-wet transition and the dry-wet transitions, especially for the lower tail- is this the case?
8. Page 15, 24-26: I think that you have long enough time series (daily, 51 years) to fit a Gamma with GP distribution model. It is indeed more parameters to fit, but if it will improve the upper 20 percentile fitting then it will be useful in the long run (especially if you want later on to deal with climate change models and precipitation extreme).

9. Page 17, 1-5: The papers you cited are not recent. There are some papers from the last decade using NHMM to fit different distributions to different locations. I think that using a multi-state approach nowadays is not really a challenge.
10. Discussion: At this section I would expect the authors to convince the reader why the models they have suggested is better than applying one of the common daily precipitation model (for example, why not applying a NHMM for the Thur catchment?).