

## Response to the Comments on Dec 20th. 2010

*The only general comment I have, to make this a stronger paper, is to expand the review of studies in long term trend of extreme precipitation, not only in Ethiopia, but also in other regions globally. This could go within Section 2 (Introduction), Section 3 (Methods), and Section 4 (Results). Not only the results of other related studies should be discussed, but also their methods in analyzing the climatological trend should be included and compared with the one used in this article.*

This is a very good suggestion. We have added two paragraphs, and to keep the flow of the manuscript, we put them both in the Introduction section. The first one is a review on trend studies of extreme precipitation in other regions; see paragraph 2, the Introduction section. The second one is a review on the methods of trend analysis in extreme precipitation; see paragraph 3, the Introduction section.

*Fig. 3: There are 3 curves in each panel. What do these curves represent?*

In each panel, the solid curve is the mean residual life plot of the sample mean of the threshold excesses versus the threshold  $u$ . The sample mean of the threshold excesses provides an empirical estimate of the mean of the threshold excesses  $E(X - u|X > u)$ , which is a linear function of  $u$ . We are looking for the smallest  $u$  beyond which the mean residual life plot is approximately linear. The two dotted curves represent the 95% confidence intervals, which is added based on the approximate normality of sample means. These curves have been clarified in the figure caption in the revision.

*Fig. 5: Again, what do the 3 curves represent, respectively?*

In Figure 5, the solid curve represents return levels calculated from estimated parameters in the GEV model (see Equation (5)). The two dotted curves give the 95% confidence intervals of return levels, obtained by simulation. First, the model parameters are generated from the multivariate normal approximation of the estimators. For each set of the generated parameters, a realization of the return level could be obtained from Equation (5). Then, the 2.5% and 97.5% percentiles of 5000 realizations of return levels will give an approximate 95% confidence interval of the return level for a return period. These curves have been clarified in the figure caption in the revision.