

## ***Interactive comment on “Future extreme precipitation assessment in Western Norway – using a linear model approach” by G. N. Caroletti and I. Barstad***

**Anonymous Referee #2**

Received and published: 3 March 2010

It has been pleasure to read this paper but I feel that I should mention that I'm not used to work with Linear Model simulations. My field of research is mostly in analyzing precipitation measurements, the Orographic influence and triggering of both avalanches and landslides.

I find this paper very interesting and useful to look for indications about changes in precipitation patterns in future climate as well for examining the orographic influence on precipitation. The abstract is quit long and is including some references which is not the case in most papers. There are some tables and figures including the same

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information, those should be cut down to a single set. My recommendation is that the paper should be accepted for publication after minor revision.

Specific comments (without some which referee#1 has already mentioned):

P7540, line 4 and 13. IPCC 2003 is missing in the reference list. Is it probably ment to be IPCC 2007? because on P7543 at line 11 you are talking about 12 simulations from IPCC 2007.

P7540, line 17-19. Extreme Precip. events should be defined before showing the future evolution.

P7541, line 23-4. IPCC 2007 is missing in the reference list. Some basic findings in the report would be great to mention.

P7542, line 18. „Deque” but „Déqué” in the reference list.

P7543, line 11. The reference to IPCC reports should probably be in the same way (with or without „Report”), not different: (IPCC, 2003) and (IPCC Report, 2007).

P7543, line 13. „Smith and Barstad's” should be followed by „(2004)”.

P7544, line 4. In the reference list only one Smith 2003 can be found so why 2003a?

P7544, line 5. I would like to see better explanation of how  $q_c$  and  $q_s$  are connected to  $P$ , probably also show the full equations  $q_c(x,y)$  and  $q_s(x,y)$

P7545, line1. Corrisponding to the first line of section 2, the first three words are superflous or LM should be explained by the same way at the first line of section 2.

P7545, line 23. Should (US Navy, 2003) be in the reference list?

P7546, line 10. The last two words should be removed.

P7547, line 6. „+” is unnecessary before 10% and 16%.

P7548, line 10. 66,7 mm but in table 8 it's 66,1 mm.

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P7548, line 23. Flora – Gloppen, with a long or short „-“ with or without spaces (line 7)?

P7549, line 12. Maybe you should refer to some basic thermodynamic literature for the constants  $R_v$  and  $L$ , and put it like  $L_v$ .

P7549, line 19. I can only count seven positive signs not eight.

P7549, line 20-23. These lines should be moved up and combined with lines 3-5. Anyway (Smith and Barstad 2003) is not in the reference list.

P7551, line 5. (Allan and Soden, 2008) are missing from the reference list.

P7551, line 13. Is 2007 correct for Zhang et al.? the year is missing in the ref. list.

P7551, line 19. „Trenberth’s” should be followed with „(2003)”.

P7552, line 7. „An an” double „an”.

P7552, line 12-14. Are you talking about increase in intensity or magnitude, as well as in line 15. If magnitude, can you then combine line 15-16 with lines 12-14?

P7552, line 14. „main cause increased influx” I think an „of” is missing.

P7553, line 22. I can’t find the reference (Christensen et al., 2007) in the paper, only (IPCC, 2007) which is not corresponding to the reference list .

P7570, fig. 2. The legend bar to right should have the label definition „elevation (m)”.

P7572, fig. 4. I suggest to use the symbol for tau (also in fig. 5).

P7573, fig. 5. Are you talking about 12 model runs or actually 12 models?

P7574, fig. 6. Besides the left part is too small, label explanations are missing all over (% , elevation, the color of the columns, latitude and longitude and a legend bar for elevation on the bigger image to the right. According the text, I wonder if you are in the beginning talking about twelve model runs or actually twelve models?

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Please try to standardize figures with histograms, f. ex. size, number of decimals and type of letter (bold or normal) in labels and titles. Labels on y-axis on all histograms should be standardized, now you have three different types. The same is for the x-axis on all figures but #7, I think „model runs” is correct. Please try to locate the legend box at similar place on all histograms (on fig. 8-10 that looks fine).

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 6, 7539, 2009.

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