

1 **Response to the reviewers' comments on "Initial assessment of a multi-model approach to**
2 **spring flood forecasting in Sweden" by J. Olsson, C. B. Uvo, K. Foster, and W. Yang**

3 Thank you very much again for careful reading and good suggestions, please find our response
4 below.

5 One criticism remains concerning the description of circulation patterns (CP) and in a weaker manner
6 the method of statistical downscaling (SD) in the supplement (S2.2 and S4). I'm not sure if a reader
7 especially those who are not so familiar with these methods can really follow the description of the
8 methodology.

9 Both methods are more thoroughly described elsewhere and we refer to this literature. Even so, it is
10 indeed important that the descriptions are correct and reasonable stand-alone. We have tried to
11 improve the presentation by some clarifications and new figures, see further below.

12 Especially in the description for the CP I miss the spatial aspect. E.g. in the literature cited (Bardossy
13 et al.) there is a summation over the grid cells in formula (2) and (3) indication that spatial structures
14 should be identified.

15 For simplification the spatial aspect was not explicitly considered in the original description, but we
16 have now clarified that the vector $V(k)$ is defined in all grid cells included in the domain.

17 Furthermore, in my opinion equation (3) can't work due to negative values in the break.

18 The brackets should be vertical bars representing absolute value (i.e. non-negative values), this has
19 been changed.

20 For both methods one or two selected graphics of each will improve the understanding.

21 We have included a total of five new figures (S1-S5) in the Supplement that we hope will improve the
22 understanding.

23 Some technical/linguistic remarks:

24 - Technical note:

25 - Page 5, line 2-4: please check if this sentence is correct with regard to Fig. 2a. It is more related to
26 Fig. 2b.

27 The problem here was that the text mentioned the period Jan-Jul but the graph showed the whole
28 year. We have changed the text.

29 - Page 5, line 10: The mean SFV at....

30 Changed.

31 - Equation (1), page5, line 18): I propose to use R =runoff (depth) [mm] instead of Q which stands for
32 discharge or streamflow in [m^3/s].

33 Changed.

- 1 - Page 5, line 29: instead “created from” something “like aggregated on basin scale from”
- 2 **Changed.**
- 3 - Page 6, last paragraph: SI unit should be used. Replace mb by hPa
- 4 **Changed.**
- 5 - Page 12, line 14: forecasts
- 6 **Changed.**
- 7 - Page 12, line 15: skip is in “RI is indicates”
- 8 **Changed.**
- 9 Supplement:
- 10 - Page 1, line 14: “etc.”.
- 11 **Do you mean that two dots are required if etc. is written in the end of a sentence? We are not sure**
- 12 **and have instead reformulated the sentence.**
- 13 - Page 10, line 25: The year is missing.
- 14 **Added (1999).**