

Review of the paper from Hellmer & Fröhle

Common remarks

The contribution is in line with the aims and scope of GMD. The paper represent a sufficiently substantial advance in modelling science? The consideration of backwater effects like realized is a novel aspect of modelling. The methods and assumptions are valid and clearly outlined. Nevertheles some additional remarks could be useful (see detailed comments). Alltogether a minor revision is recommended.

The structure of the paper and the figures are appropriate. Partly the figures have a high information density. Therefore it is difficult to recognize all details. But it is due to the nature of the subject.

Remarks about content-related aspects

Line

- 28 I would say that (1) is part of (2)
- 116 /117 &
120 / 121 this words are the identic, perhaps both models can be evaluated together
- 171 such structures control more the local and regional water levels than the flow of whole catchments, the influence on the discharge is rather short-term after operations
- 221 / 222 precipitation as part of subcatchments sounds a little bit strange, perhaps the following is better: "while precipitation time series are related to subcatchments as spatial units"
- 274 "changed differences" sounds not clear enough, would be the words" decreased volume" better?
- 386 compared to other passages the results are not discussed here
- 421 – 425 this are detailed results and not usual in a summary, partly they are a repeat

Discussion of 4.2: Three functions are dicussed and their operative criteria are mentioned (Line 223). If the reviewer has not overlooked anything, than is not clear what this criteria are and and how they are used to choose one of the three functions? It it is true, some additions would be useful. Besides in figure 4 on the left side 4 functions with Q1 to Q4 are listed. What is their meaning compared to the 3 function on the right side. A explanation is *function . . . , but there is not an additional star * in the picture.

Line 269 / 270: If the reviewer has not overlooked a special remark, than it is not discussed how the retention quantity is calculated. Perhaps GIS is used or similar?

Finally: In the text I have found some remarks which are repeats of remarks in other chapters, for example line 243 to 245. Therefore the impression is, that curtailments are possible. But it is not mandatory.

English language

The reviewer is not expert for English. Possibly the following recommendations could be useful:

Line

8 / 9	“constrol structures” instead of “drainage structures”
16	“simulating” for “modeling”
41	“will be faced by higher pressures” for “will face”
62 / 63	“impact on flow regime”
64	“outlook on” for “outlook of”
89	“like by the frequently used”
314	is “are extendable” better?
317	are the words “integrated as extensions” better suited?
321	“given by” instead of “given in”
344	the second “is” is not necessary
384	“concordance” instead of “result”
415	“The use of” instead of “Using”

Editorial corrections

96	cancel “.” after models
164	“change” for “changes”
206	perhaps n should be used already here: between n supporting points
225	“depends” for “depend”

Some passages are very long wherefore a subdivision is recommended, for example: beginning with line 245 or line 343 to line 363 (21 lines)