**Hydrology and
Earth System
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Discussions

Interactive comment on "Modeling suspended sediment sources and transport in the Ishikari River Basin, Japan using SPARROW" *by* W. Duan et al.

Anonymous Referee #2

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This is an interesting study and the topic is very relevant for the journal. Overall the paper is well written. I have few suggestions to improve the quality of the manuscript.

Major comments:

1) As far as I understand, the model was only calibrated but no validation was carried out. It is important for the readers to see how well the model performs for the data set not used in model calibration. Therefore, instead of using the all the SS data (1985 to 2010) for calibration, I suggest to split the data for calibration and validation.

2) The results shown in Fig 6 seem to me are averages for the time period used (1985–

C5354

2010). Can the model be used to predict the sediment load on annual basis? If 'yes', it will be more interesting to see the results on annul time-series.

3) In general the uncertainly in prediction of basin wide sediment load is high. The prediction uncertainty was not discussed in the paper. I would suggest strengthening the paper by adding discussion on uncertainty and/or sensitivity of the regressed parameters to the model prediction.

Minor comments:

1) P11038, L1-3: I suggest to rewrite the sentence as "…that control the fate and transport suspended sediment (SS) in rivers, because high …".

2) P11039, L14: I would use "similarly" instead of "meanwhile".

3) P11038, L17: I would not refer to just one dam (TRG). Better to be deleted.

4) Fig 8 and 9: It is not clear what is incremental? Should be explained.

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