We would like to thank the reviewer for the comments and suggestions, which have helped us to improve this paper significantly. Our detailed responses are provided point by point below.

Major Comments

1 Compensation of errors Consistently in the manuscript the authors make an argument summarized by this statement in the abstract: “It is also found that a good discharge simulation depends on a good coalition of a hydrological model and a precipitation product, suggesting that, although the satellite-based precipitation products are not as accurate as the gauge based product, they could have better performance in discharge simulations when appropriately combined with hydrological models”. The authors call this a “comprehensive result” on P9357, L26-28. See also: the 5th point of the Conclusion (P9362).

I have challenges with this point, which is presented as a buzz point of the manuscript. It would appear to me that the models could be compensating for the errors/uncertainty in the input precipitation products. Generally, this compensation manifests in some instances in the form of questionable/unrealistic model parameter values (see Nikolopoulos et al.,(2013)). Looking at Table 1 and 2 one cannot help but notice some potentially odd values that might not compare with general range of values found in most publications. Whilst the authors do not explain the geology and soil type of the study region, except that the study area is a mountainous region, parameter values like: lnTo(why is negative?), RV, saturated hydraulic conductivity and the hydraulic conductivity anisotropy ratio need to be evaluated and justified.

A discussion on where or how the precipitation error/uncertainty was compensated should have been presented!

Unfortunately, this makes the key conclusion or "comprehensive result" of this work stand on shaky ground, if the input error is being compensated in parameter value estimation.

Response:

We agree with the reviewer that the compensation should be better explained in the text. First we would like to explain the ranges of the model parameters. LnTo represents the log values of saturated hydraulic conductivity: thus it can be negative. TOPMODEL is a semi-distributed hydrological model. It uses basin-averaged parameter values, and these parameter values are estimated by experience or observation. Therefore, the parameter values are generally considered as uncertain and different ranges were provided in the previous studies (Beven and Kirkby, 1979; Beven and Freer, 2001a; Beven and Freer, 2001b; Peters et al., 2003). For example, the parameter values used by Beven and Freer (2001a) are as below.

Name (units)	Lower bound	Upper bound
SZM (m)	0.005	0.06
LNT0 ($m^2 h^{-1}$)	0.1	8
RV ($m^2 h^{-1}$)	1000	5000
SR_{max} (m)	0.005	0.3
SR_0 (m)	0	0.3
TD ($m h^{-1}$)	0.1	120

The parameter values used by Peters et al. (2003) are as below.

Name (units)	Lower bound	Upper bound
SZM (m)	0.01	0.08
LNT0 ($m^2 h^{-1}$)	-7	1
RV ($m^2 h^{-1}$)	1000	5000
SR_{max} (m)	0.015	0.1
SR_0 (m)	0	0.05
TD ($m h^{-1}$)	0.1	120

It can be seen that the parameter values of TOPMODEL in our paper are comparable with the values listed in the above tables. Therefore, we believe the parameter values used in our study are acceptable.

The parameter values of WEB-DHM model have been evaluated on the basis of basin scale water and energy cycles, for example, the accuracy of simulated based-averaged land surface temperature, discharge data and the spatial distributions of land surface temperature (Qi et al., 2015). This validation can be seen in the research by Qi et al. (2015). In addition, in our research, we showed the validation results using discharge data, and the discharge evaluation results are acceptable. Thus, the parameter values of WEB-DHM are acceptable.

In our study, we calibrated the hydrological model parameters using gauge observed precipitation data, and the same set of parameter values are applied to different products. Thus, the parameter values are not tuned to a specific product. That is, there is little compensation of model parameters for the errors in input precipitation data. The 5th point of the conclusions was drawn by comparing the simulation accuracies of WEB-DHM and TOPMDOEL, and the differences in model accuracy mainly results from the different representations of hydrological processes. That is, the errors in precipitation products are primarily compensated by the different representations of model processes.

As explained above, the paragraph in lines 26-28 on P9357 has been rephrased as below.
‘The combination of WEB-DHM and TRMM3B42 shows a great performance, with NSE and RB values of up to 0.73 and -7%, even though TRMM3B42 is not the best in monthly scale precipitation data evaluation. This reveals the influence of different characterizations of hydrological processes on the selection of precipitation data, implying that accurate discharge simulation does not solely depend on the accuracy of a precipitation product.’

A paragraph has been added in the third paragraph of section 4.1 in the revised paper as below.

'Note that the parameters of TOPMODEL and WEB-DHM were calibrated using observed precipitation data, and the accuracy of simulated discharges has been validated using gauge observations. Comparison with the parameter values reported in previous research shows the parameter values are appropriate (Beven and Freer, 2001a; Peters et al., 2003; Qi et al., 2015).'

A paragraph has been added in the section 5 in the revised paper as below.

'In this study, the parameter values calibrated using gauge observations are not tuned to a specific product. That is, there is little compensation of model parameters for the errors in input precipitation data. The differences in model accuracy mainly results from the different representations of hydrological processes. That is, the errors in precipitation products are primarily compensated by the different representations of model processes.'

2 Precipitation performance argumentation The authors in presenting and discussing their evaluation of the performance of precipitation product take an algorithmic inclined line. Basically, the authors were arguing that, say, if product X outperforms Y, the authors then say to improve Y the algorithm behind X should be taken-up/considered. This line of discussion or argumentation runs through their whole presentation in Section 3. As example on Page 9353, L20, the authors say "Thus, if TRMM3B42 wants to improve heavy precipitation estimation, the artificial neural network function [of PERSIANN] and APHRODITE products could be helpful".

Although in the particular reference cited above, the ANN is recommended when it had overestimated heavy precipitation (why?), my challenge is with overall approach of argumentation. It is not only the main statistical or mathematical equation behind a product that determines its success. It could be influenced by other factors such as the inputs used in the merged products or any internal calibration or merging procedures etc. Without addressing such confounding factors how do the authors draw up their discussions and conclusions along these lines? I did not see sufficient evidence in the manuscript to warrant such a discussion and conclusion to the extent of singling out the statistical or mathematical equation. The cause-effect framework is too simplistic and limited!

I feel the authors could have gotten more purchase by discussing their results with the perspective of use/application of the products! Section 3 was generally not well presented!

Response:

We agree with the reviewer and all relevant statements have been revised or deleted accordingly in the revised paper. The abstract and the conclusions section have been rephrased. The second point of the conclusions has been revised as below.

'GSMAP-MVK+ show huge advantage, and is better than TRMM3B42 in RB, NSE, RMSE, CC, false alarm ratio and critical success index, while PERSIANN is better than TRMM3B42 in probability of detection, precipitation probability distribution estimation and heavy rainfall estimation. At present, the new precipitation estimation mission - NASA Global Precipitation Measurement (GPM) - combines the artificial neural network function of PERSIANN and precipitation radar-matching of TRMM Multi-satellite Precipitation Analysis. However, the above finding implies that incorporating GSMAP-MVK+ estimation approach into GPM could be useful as well.'

3 Other argumentation issues:

> Arguments without clear process-level backing: There are instances in the manuscript that the authors make arguments without adequate process-level backing. On P9353, L1-5, that the authors argue that the performance/accuracy of PERSIANN is related to latitude! From a process-level perspective this is difficult to comprehend. Is this process related or it's related to the sensors used? The authors should ensure that there is process-level sufficiency in their statements in the manuscript.

Response:

Thanks for the suggestion. The statements have been deleted accordingly in the revised paper.

> Arguments without backing: On P9352, L1-5: Without seasonal analysis, how do the authors pinpoint summer convective rainfall with the authority that they do in the text?

Response:

Thanks for the suggestion. Three references that study convective precipitation in northeast China have been added to back the statement. The three references are as below.

(Shou and Xu, 2007a; Shou and Xu, 2007b; Yuan et al., 2010)

P9357, L3-5: How is the non-linear amplification derived and supported?

Response:

The 'non-linear' has been deleted and an example has been given after the statements in the revised paper as below.

'For example, for GLDAS and PERSIANN, the RB criteria at the daily scale precipitation evaluations are -27% and 28%, but they are -50% and 31% in TOPMDOEL simulations; they are 1% and 218% in WEB-DHM simulations.'

> P9356, L20-23 “Big differences. . .using PERSIANN”, where can the reader see this?

Response:

Thanks for the suggestion. The statement has been deleted in the revised paper.

4 Flows – P9360

> L3-5: You should highlight to the reader what “small”, “middle” and “large” discharge means using a value or a quantile and its corresponding discharge value?

Response:

Thanks for the suggestion. The statements have been changed accordingly in the revised paper as below.

‘Fig. 15b shows that, for small discharges (smaller than 25% quantile which corresponds to an observed discharge value of 1.79m^3/s) and large discharges (larger than 99% quantile which corresponds to an observed discharge value of 157m^3/s), hydrological models contribute most of the uncertainties. For middle magnitude flows (between 25% and 99% quantiles), precipitation products contribute the majority, and the contribution of interactions is not negligible and of similar magnitude to the contribution from hydrological models.’

> L7-9: “This may. . .discharge magnitude”. What is the meaning of this statement? Explain to the reader what “interaction effects” are – and maybe give an example?

Response:

Thanks for the suggestion. The statement has been deleted in the revised paper. The explanation has been given at the end of the same paragraph as below.

‘The different contributions of interactions for various magnitude flows may be because different magnitude rainfall data could trigger different hydrological processes (Herman et al., 2013). Small discharges mainly come from base flows which are relatively stable and do not need much rainfall to be triggered, and large discharges are mainly controlled by overland flows when heavy precipitation occurs. Middle magnitude discharges consist of contributions from base flows, lateral subsurface flows and overland flows. It is more complex and can be triggered by various magnitude rainfalls - thus interactions are more changeable.'

> L 13-15: Whilst it is vague what the authors mean by middle flows numerically, I am not sure that the statement holds physically. I would think contributions from groundwater flows in such a simulation would be baseflows and these would be low flows – in your terminology, what you call "small" discharges?

Response:

Thanks for the suggestion.

Small magnitude flow represents the data that are smaller than 25% quantile which corresponds to an observed discharge value of 1.79m^3/s.

Large magnitude flow represents the data that are larger than 99% quantile which corresponds to an observed discharge value of 157m^3/s.

Middle magnitude flow represents the data that are between 25% and 99% quantiles.

The statements have been revised according as below.

'Small discharges mainly come from base flows which are relatively stable and do not need much rainfall to be triggered, and large discharges are mainly controlled by overland flows when heavy precipitation occurs. Middle magnitude discharges consist of contributions from base flows, lateral subsurface flows and overland flows. It is more complex and can be triggered by various magnitude rainfalls - thus interactions are more changeable.'

> L22-24: How is this practically feasible that precipitation products provide such information?

Response:

Thanks for the suggestion. The statement has been deleted in the revised paper, and a paragraph has been added in section 5 in the revised paper as below to explain how to get the combination.

‘In addition to improving the accuracy of precipitation products, a good collation could help to achieve the performance in discharge simulations. Our approach provides a way to assess the different coalitions, i.e., the overall uncertainties in simulated discharges from different combinations of hydrological models and precipitation products. More precipitation products and hydrological models should be included and tested in the future work.’

5 Use appropriate terminology and scientific English. For example the issue of “small”, “medium” and “large” discharges highlighted above. In section 3, avoid using the word “worst” in your comparisons.

Response:

Thanks for the suggestion. These issues have been revised accordingly.

6 The scheme in Figure 2 – Did you use this scheme eventually in the paper? Or it’s something you forgot to edit out? In case you used it, on P9344, you will need to justify the experimental set ups you came up with e.g. why not GLDAS and APHRODITE?

Response:

Thanks for the suggestion. The figure has been deleted.

7 Why didn’t you apply the same calibration method for both models?

Response:

Thanks for the suggestion. Because TOPMODEL is computationally efficient, but

WEB-DHM is computationally expensive. In one single run, WEB-DHM needs 4 hours to simulate one year discharges but TOPMODEL needs 2 seconds only using the same computer.

8 CDFs - (P9354) L14-25: How are you defining “larger rainfall intensity”? Could it be due that there is usually limited “larger intensity” events/observations in those regions of any distribution such that it appears as good performance, but in actual fact it’s just spurious good performance?

Response:

Thanks for the suggestion. The statement has been changed in the revised paper as below.

‘All precipitation products overestimate occurrence and volume probabilities except rainfall intensities of larger than 63mm/day and 53mm/day for occurrence and volume probabilities, respectively. This may be because the precipitation products overestimate the intensity of some heavy rainfall (recall the results in section 3.1).’

9 P9358, L11-14: Is this really counter-intuitive? It is accepted that good modelling work depends on having good data and a good or appropriate model structure

Response:

Thanks for the suggestion. The statement has been deleted in the revised paper.

10 Without advocating for long and winding papers, generally it appears that the writing leaves a lot of the issues hanging or incompletely presented. As an example in section 1.0, as a reader one does not get the continuity of the text. Please revise the manuscript.

Response:

Thanks for the suggestion. The paper has been revised accordingly. We have revised the second paragraph from the back in the introduction section as below.

'The overall aim of this paper is to develop a framework to quantify the contributions of uncertainties from precipitation products, hydrological models and their interactions to uncertainty in simulated discharges. To achieve the aim, the first step is to understand the performance of the selected precipitation products including TRMM3B42, TRMM3B42RT, GLDAS/Noah (GLDAS_Noah025SUBP_3H), APHRODITE, PERSIANN and GSMAP-MVK+, when applied to the chosen hydrological models. Two hydrological models of different complexities - a water and energy budget-based distributed hydrological model (WEB-DHM) (Wang et al., 2009a; Wang et al., 2009b; Wang et al., 2009c) and a physically-based semi-distributed hydrological model TOPMODEL (Beven and Kirkby, 1979) - were employed to investigate the influence of hydrological models on discharge simulations. Building on the assessment of precipitation products, the second step is to quantify the respective uncertainties from precipitation products and hydrological models, and the combined uncertainties from the interactions between products and models. This is achieved using a global sensitivity analysis approach, i.e., the analysis of variance approach (ANOVA). A river basin in northern China with a series of 8-year data is used to demonstrate the methodology.'

Technical Corrections

P9338, L1-7: Sentence too long. Please revise!

Response:

Thanks for the suggestion. The statement has been changed in the revised paper as below.

'The applicability of six fine-resolution precipitation products, including precipitation radar, infrared, microwave and gauge-based products using different precipitation computation recipes, is evaluated using statistical and hydrological methods in northeastern China. In addition, a framework quantifying uncertainty contributions of precipitation products, hydrological models and their interactions to uncertainties in ensemble discharges is proposed.'

P9338, L5: "usually-neglected area" has no hydrologic value. Remove!

Response:

Thanks for the suggestion. The statement has been removed.

P9339, L5-7: "However. . .rural areas". Revise!

Response:

Thanks for the suggestion. The statement has been changed in the revised paper as below.

'However, precipitation data are not available in many regions, particularly mountainous districts and rural areas in developing countries.'

P9340, L21-23: Add reviews of uncertainty quantification/analysis work by Kuczera et al., (2006), Vrugt et al (2009b), Vrugt et al (2009a), Tolson and Shoemaker (2007).

Response:

Thanks for the suggestion. Changes have been made accordingly in the revised paper.

P9341, L3-6: Revise! The repeated use of "and" makes the sentence difficult to read.

Response:

Thanks for the suggestion. Changes have been accordingly in the revised paper as below.

'In addition to individual contributions from hydrological models and precipitation data, the interactions between precipitation products and hydrological models also contribute to uncertainty in simulated discharges.'

P9341, L11: Remove “usually-neglected area” P9341, L14: Replace “include” with “are”

Response:

Thanks for the suggestion. Changes have been made accordingly in the revised paper.

P9344, L17: Use the common-abbreviation NSE instead of NSCE throughout the manuscript.

Response:

Thanks for the suggestion. Changes have been made accordingly in the revised paper.

P9345, L4-6: So?

Response:

Thanks for the suggestion. Changes have been made accordingly in the revised paper.

P9346: If you don’t have hourly data, why force it?

Response:

Thanks for the suggestion. Because in this study we want to investigate the influences of hydrological models on simulated discharges, and WEB-DHM has to use hourly data. Many studies have shown that using the downscaled hourly data is acceptable in discharge simulations (Wang et al., 2009c; Wang et al., 2011; Wang et al., 2012; Zhou et al., 2015). In addition, in this study we also showed the accuracy of simulated discharges is acceptable particularly at monthly and inter-annual scales.

P9346, L22-24, “Surface air. . . gauges” Not clear. Explain!

Response:

Thanks for the suggestion. Changes have been made accordingly in the revised paper as below.

‘Because of the elevation differences among model cells and meteorological gauges, the interpolated surface air temperatures are further modified with a lapse rate of 6.5K/km.’

P9347, L14: Secondly instead of second.

Response:

Thanks for the suggestion. Changes have been made accordingly in the revised paper.

P9347, L26: add ‘the’- “. . . of the above mentioned. . .”

Response:

Thanks for the suggestion. Changes have been made accordingly in the revised paper.

P9347 – Fig 3 contains results and these should be presented and discussed in the results section and not here! Discuss your parameter values also.

Response:

Thanks for the suggestion. Section 4.1 has been added to present and discuss the hydrological model assessment results and hydrological model parameters. Discussion about hydrological model parameters in section 2.4 has been moved to section 4.1. The contents in section 4.1 are as below.

‘WEB-DHM was calibrated against observed discharges of Biliu. Six main parameters were selected to calibrate using a trial and error approach due to the model’s computational burden. Model parameter multipliers were calibrated, similar to the study by Wang et al. (2011). The ‘Trial and error’ approach has two steps. First, all the multiplier values are set to 1 which represents the default parameter values from Food and Agriculture Organization (FAO) (2003) and SiB2 model. Second, varying the multiplier values until acceptable discharge simulation accuracy is obtained. The calibrated parameter values are listed in Table 2. The simulated daily, monthly and inter-annual results are shown in Figs. 9a, 9c and 9e.

TOPMODEL uses basin-averaged parameter values, and these parameter values are estimated by experience or observation. However, these methods do not give precise parameter values. Therefore, the parameter values are considered as uncertain and provided with ranges based on experience (Beven and Kirkby, 1979; Beven and Freer, 2001a; Beven and Freer, 2001b; Peters et al., 2003). Six parameters of TOPMODEL were calibrated using the dynamically dimensioned search algorithm (Tolson and Shoemaker, 2007), and the results are given in Table 3. The simulated daily, monthly and inter-annual results are shown in Figs. 9b, 9d and 9f.

Note that the parameters of TOPMODEL and WEB-DHM were calibrated using observed precipitation data, and the accuracy of simulated discharges has been validated using gauge observations. Comparison with the parameter values reported in previous research shows the parameter values are appropriate (Beven and Freer, 2001a; Peters et al., 2003; Qi et al., 2015).'

P9349, L14-15: this line is too similar in phrasing to what is in the paper by Bosshard et al.(2013). Revise!

Response:

Thanks for the suggestion. Changes have been accordingly in the revised paper as below.

'ANOVA could underestimate variance when the sample size is small (Bosshard et al., 2013).'

P9351, L21-23: Revise!

Response:

Thanks for the suggestion. Changes have been made accordingly in the revised paper as below.

‘None of the products can outperform others in terms of all the statistical criteria. This may be due to the different limitations of satellite sensors and inverse algorithms of precipitation products.’

P9353, L3: This may be attributed to the different. . .

Response:

Thanks for the suggestion. Changes have been made accordingly in the revised paper.

P9353, L10: Is the “trend” visually assessed?

Response:

Thanks for the suggestion. This sentence has been deleted because the requirement of reviewers.

P9357, L14-23, “In the case. . . and models”: Highlight where the peak discharge over/under estimation assessment is coming from? Clarify the reason in simple terms for the reader – what is the hydrological model influence and interactive influence?

Response:

Thanks for the suggestion. This sentence has been deleted.

P9358, L3: Is no better than?

Response:

Thanks for the suggestion. Yes. The RB and NSE of WEB-DHM and APHRODITE combination are -37% and 0.5, but they are -24% and 0.51 for the combination of TOPMDOEL and APHRODITE. This sentence has been added after the statement.

P9358, L4: This could be due to. . .

Response:

Thanks for the suggestion. Change has been made accordingly.

P9358, L19-25: Review and revise! The conclusion on TOPMODEL vs. WEB-DHM appears rushed. It's obvious that using good data and an inappropriate model structure results in poor performance, if parameter physical implications are kept in check! How do we achieve the coalition?

Response:

Thanks for the suggestion. As shown in the 'Major Comments 1', the parameters of TOPMODEL and WEB-DHM were calibrated using observed data, and the accuracy of simulated discharges have been validated using gauge observations. In addition, comparison with the parameter values reported in previous research (Beven and Freer, 2001a; Peters et al., 2003; Qi et al., 2015) shows the parameter values are appropriate.

The coalition can be achieved using a trial and error approach: for example, combining different hydrological models with a used precipitation product and selecting the best combination; combining different precipitation products with a used hydrological model and selecting the combination with best discharge simulation accuracy.

Having said this, the statements have been deleted and two paragraphs have been added in the revised paper as below.

The third paragraph in section 4.1:

‘Note that the parameters of TOPMODEL and WEB-DHM were calibrated using observed precipitation data, and the accuracy of simulated discharges has been validated using gauge observations. Comparison with the parameter values reported in previous research shows the parameter values are appropriate (Beven and Freer, 2001a; Peters et al., 2003; Qi et al., 2015).’

The second paragraph in section 5:

‘In addition to improving the accuracy of precipitation products, a good collation could help to achieve the performance in discharge simulations. Our approach provides a way to assess the different coalitions, i.e., the overall uncertainties in simulated discharges from different combinations of hydrological models and precipitation products. More precipitation products and hydrological models should be included and tested in the future work.’

P9359, L7-9: “This shows. . . accuracy” - What do you mean?

Response:

Thanks for the suggestion. This sentence has been deleted.

P9361, L1-2: Sentence is incomplete!

Response:

Thanks for the suggestion. The sentence has been rephrased as below.

‘This research assesses the applicability of six precipitation products with fine spatial and temporal resolutions at a high latitude region in northeast China using both statistical and hydrological evaluation methods at multi-temporal scales.’

References:

Beven, K.J., Freer, J.E., (2001a). A dynamic TOPMODEL. Hydrological Processes, 15(10): 1993-2011. DOI:10.1002/hyp.252

Beven, K.J., Freer, J.E., (2001b). Equifinality, data assimilation, and uncertainty estimation in mechanistic modelling of complex environmental systems using the GLUE methodology. Journal of Hydrology, 249(1-4): 11–29. DOI:10.1016/S0022-1694(01)00421-8

Beven, K.J., Kirkby, M.J., (1979). A physically based, variable contributing area model of basin hydrology. Hydrological Sciences Bulletin, 24(1): 43-69. DOI:10.1080/02626667909491834

Bosshard, T., Carambia, M., Goergen, K., Kotlarski, S., Krahe, P., Zappa, M., Schär, C., (2013). Quantifying uncertainty sources in an ensemble of hydrological climate-impact projections. Water Resources Research, 49(3): 1523-1536. DOI:10.1029/2011wr011533

Food and Agriculture Organization (FAO), 2003. Digital soil map of the world and derived soil properties, land and water digital media series [CD-ROM], Rome, Italy.

Herman, J.D., Reed, P.M., Wagener, T., (2013). Time‐varying sensitivity analysis clarifies the effects of watershed model formulation on model behavior. Water Resources Research, 49: 1400-1414. DOI:10.1002/wrcr.20124

Peters, N.E., Freer, J., Beven, K., (2003). Modelling hydrologic responses in a small forested catchment (Panola Mountain, Georgia, USA): a comparison of the original and a new dynamic TOPMODEL. Hydrological Processes, 17(2): 345-362.

DOI:10.1002/hyp.1128

Qi, W., Zhang, C., Fu, G., Zhou, H., (2015). Global Land Data Assimilation System data assessment using a distributed biosphere hydrological model. Journal of Hydrology, 528: 652-667. DOI:10.1016/j.jhydrol.2015.07.011

Shou, Y., Xu, J., (2007a). The rainstorm and mesoscale convective systems over northeast China in june 2005 I: A synthetic analysis of mcs by conventional observations and satellite data (in Chinese). Acta Meteorologica Sinica, 65(2): 160-170.

Shou, Y., Xu, J., (2007b). The rainstorm and mesoscale convective systems over northeast China in june 2005 II: A synthetic analysis of mcs's dynamical structure by radar and satellite observations (in Chinese). Acta Meteorologica Sinica, 65(2): 171-182.

Tolson, B.A., Shoemaker, C.A., (2007). Dynamically dimensioned search algorithm for computationally efficient watershed model calibration. Water Resources Research, 43(1). DOI:10.1029/2005wr004723

Wang, F., Wang, L., Koike, T., Zhou, H., Yang, K., Wang, A., Li, W., (2011). Evaluation and application of a fine-resolution global data set in a semiarid mesoscale river basin with a distributed biosphere hydrological model. Journal of Geophysical Research, 116(D21). DOI:10.1029/2011jd015990

Wang, F., Wang, L., Zhou, H., Saavedra Valeriano, O.C., Koike, T., Li, W., (2012). Ensemble hydrological prediction-based real-time optimization of a multiobjective reservoir during flood season in a semiarid basin with global numerical weather predictions. Water Resources Research, 48(7): W07520. DOI:10.1029/2011wr011366

Wang, L., Koike, T., Yang, D.W., Yang, K., (2009a). Improving the hydrology of the Simple

Biosphere Model 2 and its evaluation within the framework of a distributed hydrological model. Hydrological Sciences Journal-Journal Des Sciences Hydrologiques, 54(6): 989-1006. DOI:10.1623/hysj.54.6.989

Wang, L., Koike, T., Yang, K., Jackson, T.J., Bindlish, R., Yang, D., (2009b). Development of a distributed biosphere hydrological model and its evaluation with the Southern Great Plains Experiments (SGP97 and SGP99). Journal of Geophysical Research, 114(D8). DOI:10.1029/2008jd010800

Wang, L., Koike, T., Yang, K., Yeh, P.J.-F., (2009c). Assessment of a distributed biosphere hydrological model against streamflow and MODIS land surface temperature in the upper Tone River Basin. Journal of Hydrology, 377(1-2): 21-34. DOI:10.1016/j.jhydrol.2009.08.005

Yuan, M., Li, Z., Zhang, X., (2010). Analysis of a meso scale convective system during a brief torrential rain event in Northeast China (in Chinese). Acta Meteorologica Sinica, 68(1): 125-136. DOI:10.11676/qxxb2010.013

Zhou, J., Wang, L., Zhang, Y., Guo, Y., Li, X., Liu, W., (2015). Exploring the water storage changes in the largest lake (Selin Co) over the Tibetan Plateau during 2003-2012 from a basin-wide hydrological modeling. Water Resources Research. DOI:10.1002/2014wr015846