We would like to thank Referee #2 for his/her interest in this topic and for the valuable comments to improve our manuscript. Based on the comments some calculations have been performed. Our point-by-point response to the comments is given in the following (**Comments in black**, Answers in blue and the content related to the changes in the revised manuscript are marked in orange.):

A correct representation of root zone water storage is important for a robust hydrological modeling. However, in reality, obtaining reliable soil water information is difficult. In many previous studies, the root zone water storage has been quantified as the soil moisture in a certain depth rather than the water stored in the entire rooting system. This leads to an under- or over- estimation of root zone water storage depending on individual site conditions, including the types of vegetation covers on the land surface. The aim of the paper by Mao and Liu is to develop a hydrological model, WAYS, that is capable for simulating root zone water storage on a global scale, without constraining the quantification to a certain depth. Overall, I think the development of such a model is valuable to the hydrological community and can largely advance the eco-hydrological studies which tackle the interactions between the hydrological cycle and vegetation dynamics on the land surface. I personally also think with the further development and improvement, WAYS has the potential to be applied in the investigation of land-vegetation-climate-water integrations which is very important for the global change impact assessments. Below I give some comments on the paper and hope the authors can address them in the revision.

We would like to thank the referee for this comment. Based on the referee's comments, our point-to-point reply to the comments is given in the following.

General comments

1. The model structure of WAYS is the core of this paper (Figure 1). Its scientific clarity is essential for others to understand the processes and also is important for possible future wider applications of the model beyond the authors' group. In the current version, the variables in the flow chat depicted in the small window and the ones in the schematic are not all matched. E.g., in the small window, Si, Pe, Rr, Sf, and Ss are used, but they are not indicated in the schematic. Even if their meanings are clear (some are not clear to me), the authors still need to denote them properly in the schematic. In addition, given the central role of Figure 1 in the entire paper, I suggest the authors to add some text elaborating the flow of the figure. This is different from the following sections describing individual processes in the model.

Thank you for the comment. We have updated the figure accordingly. S_f and S_s are the two conceptual reservoirs in the model representing the fast and slow response in hydrological cycling. They are slightly different from the other three conceptual reservoirs, S_i, S_{rz} and S_w, which represent the actual water storages (Gao et al., 2014). Therefore, we have marked these response reservoirs with a dashed line in the schematic. Moreover, some of the fluxes are intermediate variables, e.g., R_f is the generated preferential runoff in the root zone layer before the split of runoff into surface runoff and subsurface runoff. The effective precipitation P_e is the sum of snowmelt and precipitation throughfall. These fluxes are shown in the flowchart but cannot be properly visualized in the schematic drawing. We have explained this mis-match issue in the text in the revised manuscript.

In addition, we have added a few sentences to further elaborate the flow of the figure in the revised manuscript. The changes can be found in the following section “Authors’ change in the manuscript.”

Authors’ change in the manuscript.

Page 4: Figure 1 is updated

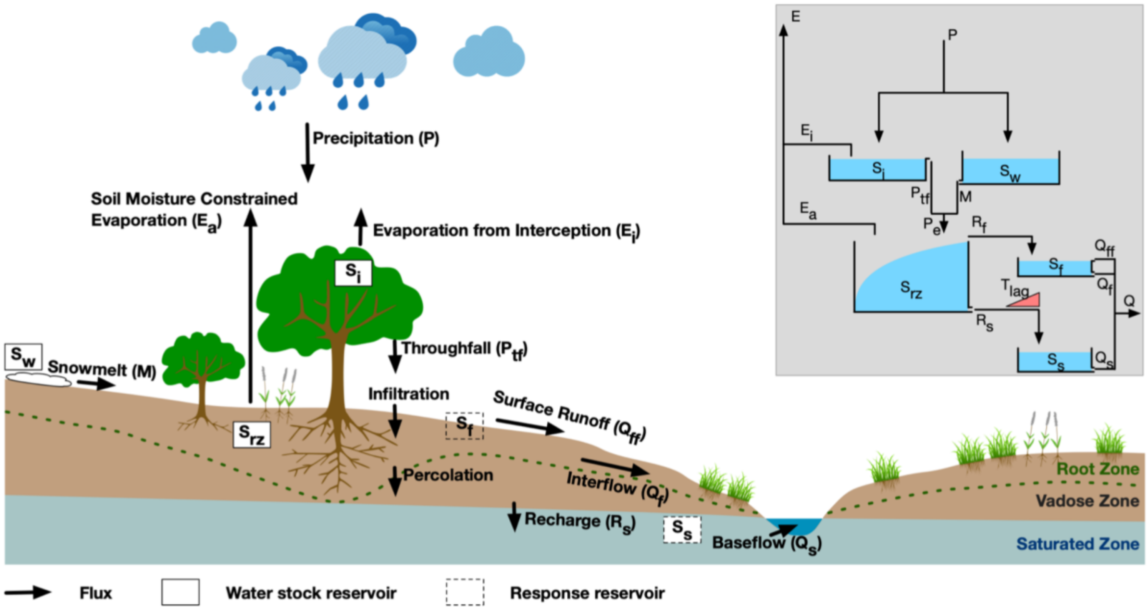


Figure 1. Model structure of WAYS

Page 3, Line 25: The following text is inserted.

In Figure 1, the flowchart represents the conceptualized hydrological cycle in the model, and the schematic drawing shows the corresponding water fluxes and stocks in the real world. Since some of the fluxes are intermediate variables, they are shown in the flowchart but not visualized in the schematic drawing. For instance, Rf is the generated preferential runoff in the root zone layer before the split of the runoff into surface runoff and subsurface runoff. The effective precipitation Pe is the sum of snowmelt and precipitation throughfall. The conceptualized hydrological cycle of the model can be briefly described as follows. The precipitation that can drop as rainfall or snowfall depends on the temperature. The snowfall will be stored in the snow reservoir, and the rainfall will be intercepted by the canopy before it reaches the surface. After the interception, the rainfall penetrates the canopy and reaches the surface as precipitation throughfall. The effective precipitation that consists of the throughfall and the snowmelt will partially infiltrate into the soil, and the rest runs away as runoff. The runoff is then split into surface runoff and subsurface runoff depending on the texture. A part of the infiltration will be stored in the soil for plants, and the rest will percolate into the deep soil and reach the groundwater table as groundwater recharge.

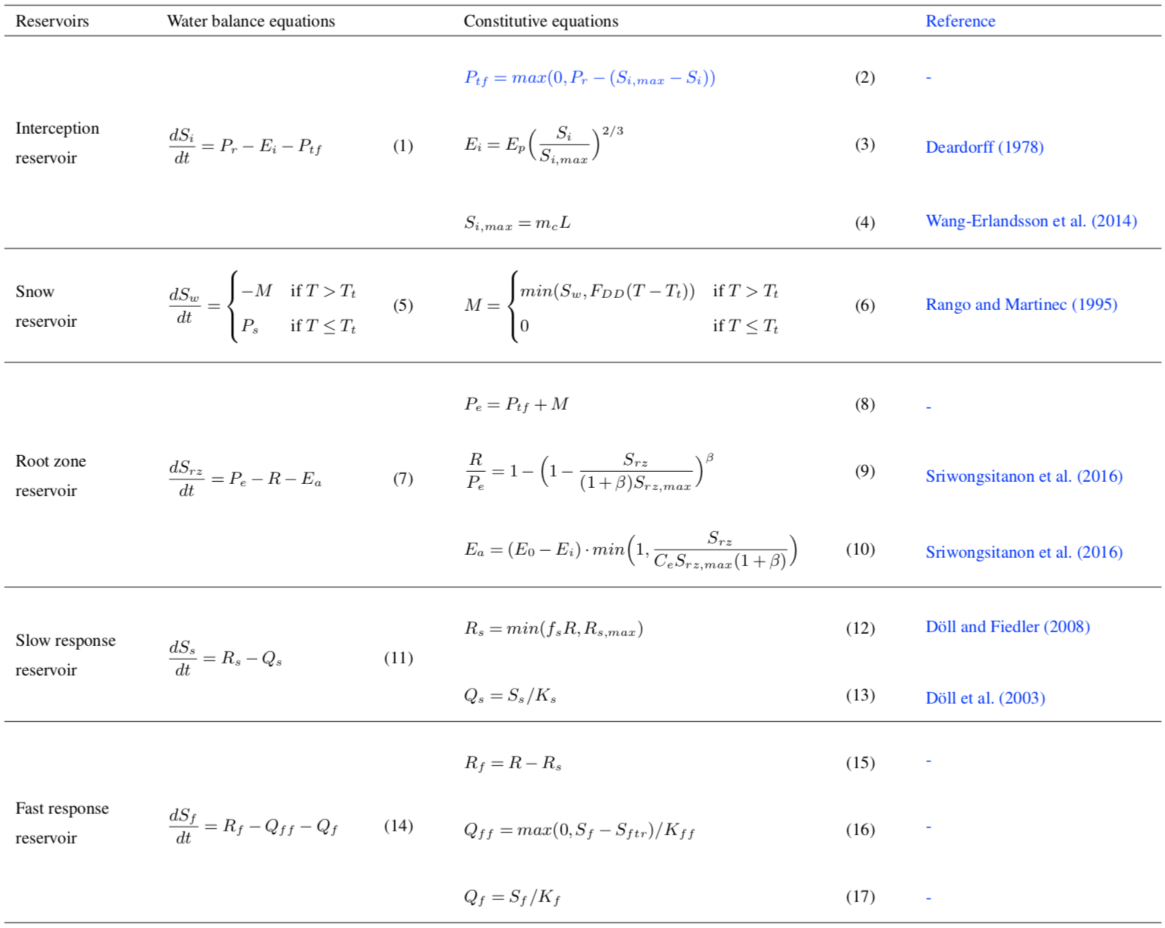
2. Table 1 gives all the equations concerning the water balance in WAYS. This is very useful for examining the processes and evaluating the robustness of the model. As all the equations are from the relevant literature (the authors give the references in the text), it would be good to provide the major references in the last column of Table 1.

Thank you for the comment. We have updated the Table 1 accordingly. The updated table can be found in the following section “Authors’ change in the manuscript.”

Authors’ change in the manuscript.

Page 8: Table 1 is updated. (the changes are marked as blue)

Table 1. Water balance and constitutive equations used in WAYS



Reservoirs	Water balance equations		Constitutive equations		Reference
Interception reservoir	$\frac{dS_i}{dt} = P_r - E_i - P_{tf}$	(1)	$P_{tf} = max(0, P_r - (S_{i,max} - S_i))$	(2)	-
			$E_i = E_p\left(\frac{S_i}{S_{i,max}}\right)^{2/3}$	(3)	Deardorff (1978)
			$S_{i,max} = m_c L$	(4)	Wang-Erlandsson et al. (2014)
Snow reservoir	$\frac{dS_w}{dt} = \begin{cases} -M & \text{if } T > T_t \\ P_s & \text{if } T \leq T_t \end{cases}$	(5)	$M = \begin{cases} min(S_w, F_{DD}(T - T_t)) & \text{if } T > T_t \\ 0 & \text{if } T \leq T_t \end{cases}$	(6)	Rango and Martinec (1995)
Root zone reservoir	$\frac{dS_{rz}}{dt} = P_e - R - E_a$	(7)	$P_e = P_{tf} + M$	(8)	-
			$\frac{R}{P_e} = 1 - \left(1 - \frac{S_{rz}}{(1+\beta)S_{rz,max}}\right)^{\beta}$	(9)	Sriwongsitanon et al. (2016)
			$E_a = (E_0 - E_i) \cdot min\left(1, \frac{S_{rz}}{C_e S_{rz,max}(1+\beta)}\right)$	(10)	Sriwongsitanon et al. (2016)
Slow response reservoir	$\frac{dS_s}{dt} = R_s - Q_s$	(11)	$R_s = min(f_s R, R_{s,max})$	(12)	Döll and Fiedler (2008)
			$Q_s = S_s / K_s$	(13)	Döll et al. (2003)
Fast response reservoir	$\frac{dS_f}{dt} = R_f - Q_{ff} - Q_f$	(14)	$R_f = R - R_s$	(15)	-
			$Q_{ff} = max(0, S_f - S_{ftr})/K_{ff}$	(16)	-
			$Q_f = S_f / K_f$	(17)	-

Note: all the time scale-dependent parameters need to be divided by Δt to make the equations dimensionally correct and suitable for any other time scales.

- in the reference column indicates that the formula is taken from the FLEX model.

3. Are there any other values used for Rx,max rather than 7, 4.5 and 2.5 for sandy soil, loamy soil and clayey soil? May be worth a checking for uncertainties stemmed from the use of Rx,max values for the mentioned soils.

Thank you. Since the groundwater recharge module in WAYS is based on the work of Döll and Fiedler (2008), the values are directly taken from that publication. These values are also used for other global groundwater recharge simulation-related works, e.g., Müller Schmied et al. (2014). However, these are indeed empirical parameter values. We agree with the referee that the uncertainty/sensitivity analysis is necessary for $R_{s,max}$. We have performed the uncertainty/sensitivity analysis, and the results are shown in Supplementary Information (SI).

The following part is put in the SI.
Since the groundwater recharge module in WAYS is based on the work of Döll and Fiedler (2008), the values are taken directly from it. These values are also used for other global groundwater recharge simulation-related works, e.g., Müller Schmied et al. (2014). However, as these are indeed empirical parameter values, uncertainty/sensitivity analysis is necessary for $R_{s,max}$. Three pixels from different soil types are selected for the $R_{s,max}$-induced uncertainty investigation. Figure S1 shows the grouped soil texture classes for this study based on the FAO Harmonized World Soil Database and the selected pixels for the uncertainty analysis. Pixel 1, pixel 2 and pixel 3 represent the soil type of clay, loam and sand, respectively.

$R_{s,max}$ (mm/day) directly influences the matrix flow (contributes 100% to groundwater recharge with a certain time lag) based on equation 12 in Table 1 in the manuscript, as it controls the maximum groundwater recharge for different soil types. Consequently, it will also impact the preferential flow, as the runoff is partially split into matrix flow and the rest to the preferential flow. Therefore, parameter $R_{s,max}$ will have light effects on the runoff generation but could have considerable impacts on the matrix flow and preferential flow. Thus, the sensitivity of the simulated preferential flow and matrix flow to the maximum groundwater recharge $R_{s,max}$ is investigated, and the results are shown in Figure S2 (pixel with clayey soil), Figure S3 (pixel with loamy soil) and Figure S4 (pixel with sandy soil). The sensitivities of WAYS to $R_{s,max}$ are checked by perturbing the parameter. We set the simulation with soil texture-specified $R_{s,max}$ as the control run, and perturbed $R_{s,max}$ by -80%, -50%, -20%, 20%, 50% and 80% for the sensitivity test. Figure S2 (bottom plot) shows the impacts of the values of $R_{s,max}$ on the simulated daily matrix flow with the soil type of clay. With the increase in $R_{s,max}$, the simulated daily matrix flow has a higher peak, while the opposite is observed with the decrease in $R_{s,max}$. It changes the scale of the simulated matrix flow but not its shape at the daily scale. Moreover, due to the change in daily simulation, the monthly simulation of the matrix and preferential flow are affected accordingly, as seen in Figure S2 (top and middle plots). The results show that parameter $R_{s,max}$ has opposite impacts on preferential flow and matrix flow, which is logical because both are part of the runoff. A similar phenomenon is found in daily simulated time series. Thus, for pixel 2 and pixel 3, only monthly simulated matrix and preferential flow are shown to visualize the uncertainties stemming from $R_{s,max}$ for loamy and sandy soil. The simulated matrix flow time series with a decreased value of $R_{s,max}$ shows are found to have larger uncertainties than time series with an increased value of $R_{s,max}$, because the maximum value of matrix flow is not only determined by $R_{s,max}$ but also the groundwater recharge factor f_s.

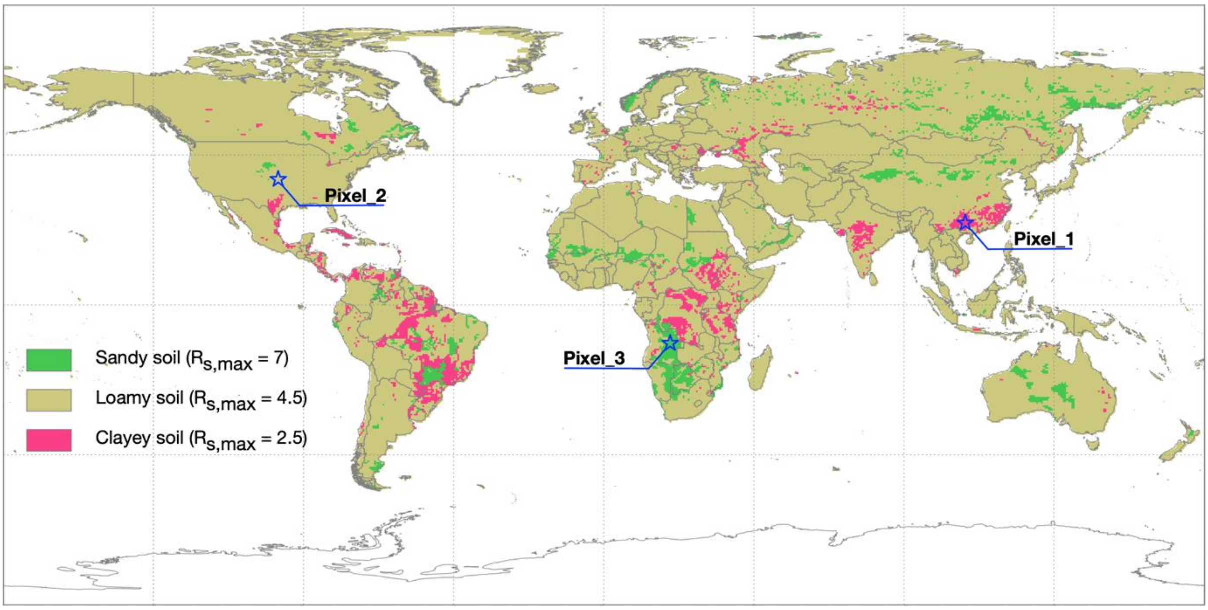


Figure S1. Grouped soil texture classes for the study based on the FAO Harmonized World Soil Database.

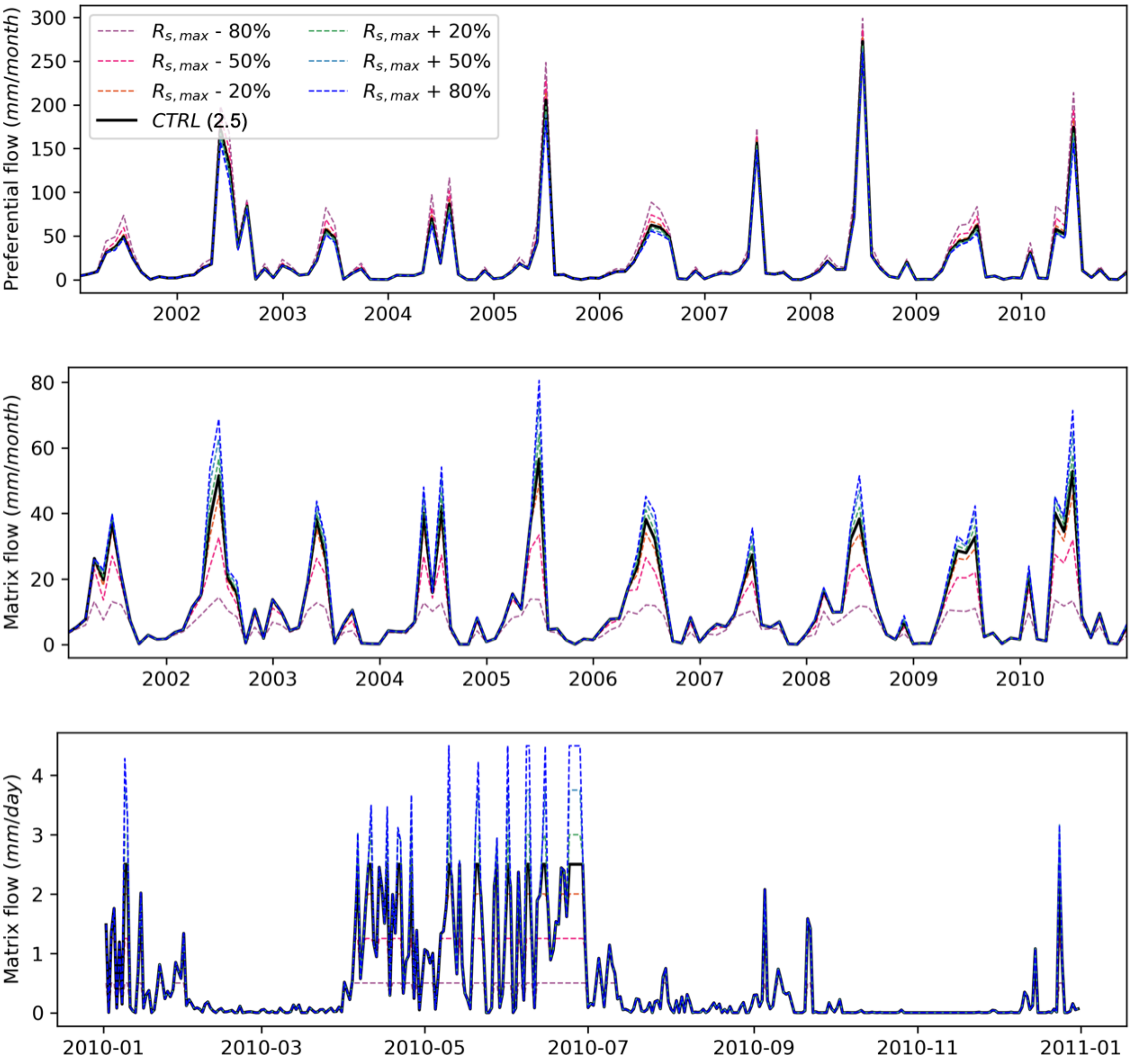


Figure S2. Sensitivity of the simulated preferential flow and matrix flow to the maximum groundwater recharge $R_{s,max}$ for the pixel with clayey soil.

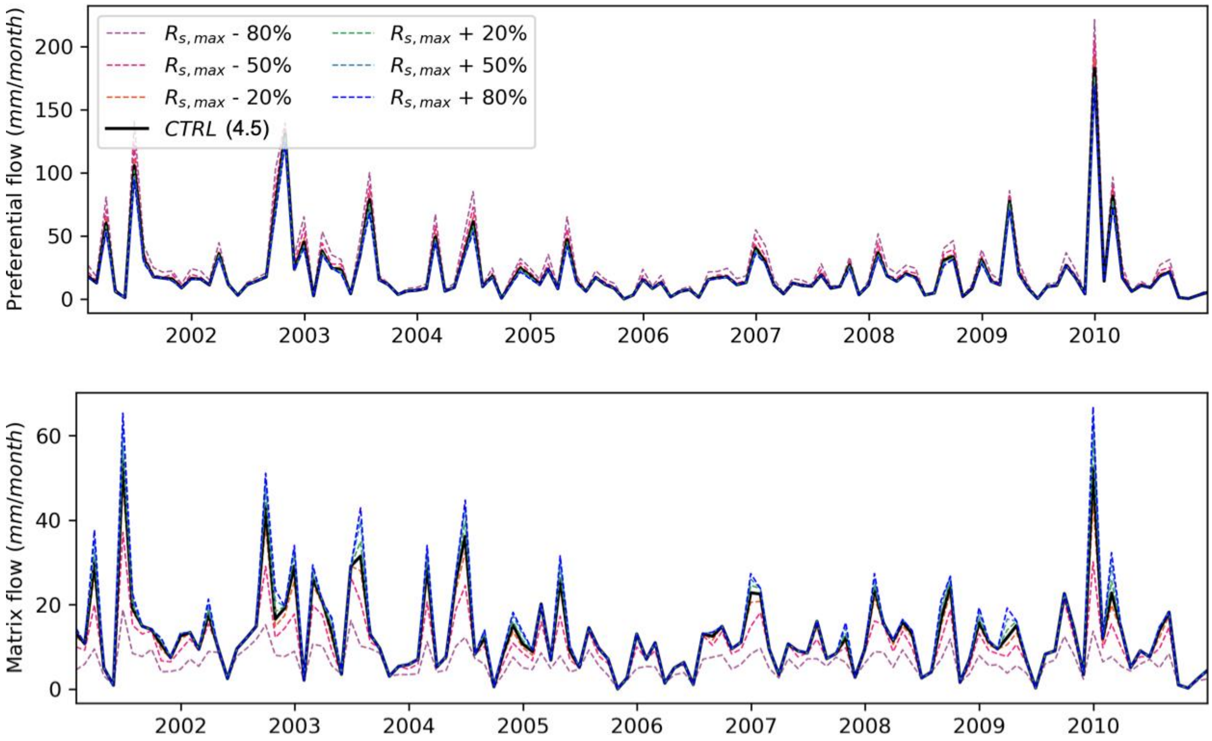


Figure S3. Sensitivity of the simulated preferential flow and matrix flow to the maximum groundwater recharge $R_{s,max}$ for the pixel with loamy soil.

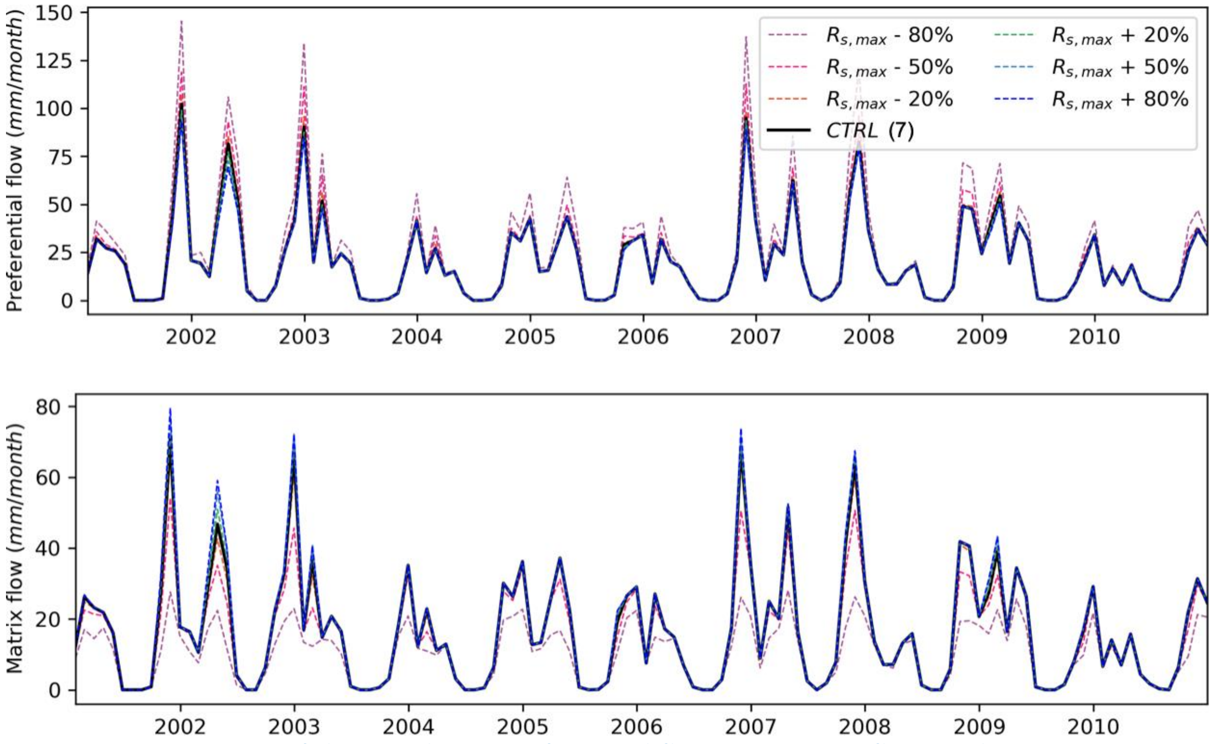


Figure S4. Sensitivity of the simulated preferential flow and matrix flow to the maximum groundwater recharge $R_{s,max}$ for the pixel with sandy soil.

4. In the captions of Figures 4 and 5, the ERA-Interim/Land represents the reference data. I think it is better to directly use ERA-Interim/Land here, because in the Figures, the ERA is used and no reference data is indicated. Also in Figure 4, WAYS-CHIRPS is not visible. Need to give a note for it, e.g., covered by . . .. The scale for Y axis for Murray Darling should be enlarged to show the simulated runoff more clearly.

Thank you for the comment. Figure 4 and Figure 5 are updated accordingly. The scale for the Y axis for Murray Darling is slightly enlarged because the uncertainty range from the other model is quite large. A big enlargement will erase the simulations from ISIMIP2a models. We would also like to note that because Referee #1 suggested us to mention the non-calibration issue of ISIMIP2a model simulations in the captions of Figures 4 and 5, these changes are also shown in the captions. In addition, in short comment #1 (comment 10), the reviewer suggested us to move the Figures 2 and 3 from the main text of the manuscript. Thus, the figures in the revised manuscript are re-sorted.

Authors' change in the manuscript.

Page 14: Figure 2 caption is updated

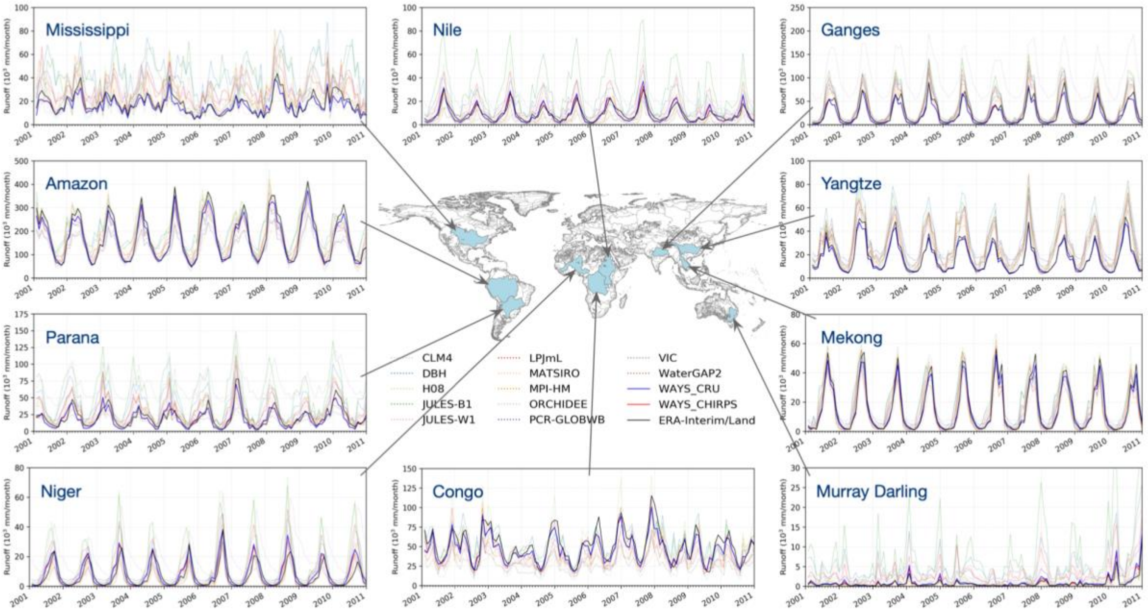


Figure 2. Time series of monthly runoff simulated by WAYS and the ISIMIP2a models, as well as the reference data. The basins highlighted in the world map indicate the selected catchments for model evaluation. The solid lines in blue and red indicate the WAYS simulations with two different RZSC products. The solid line in black indicates the ERA-Interim/Land data, and dashed lines represent the ISIMIP2a model simulations. In some plots, the red line is not visible and is covered by the blue line due to the small differences between the two WAYS runs. WAYS is calibrated using Composite Monthly Runoff data, while the ISIMIP2a models are not calibrated for the simulation.

Page 15: Figure 3 caption is updated

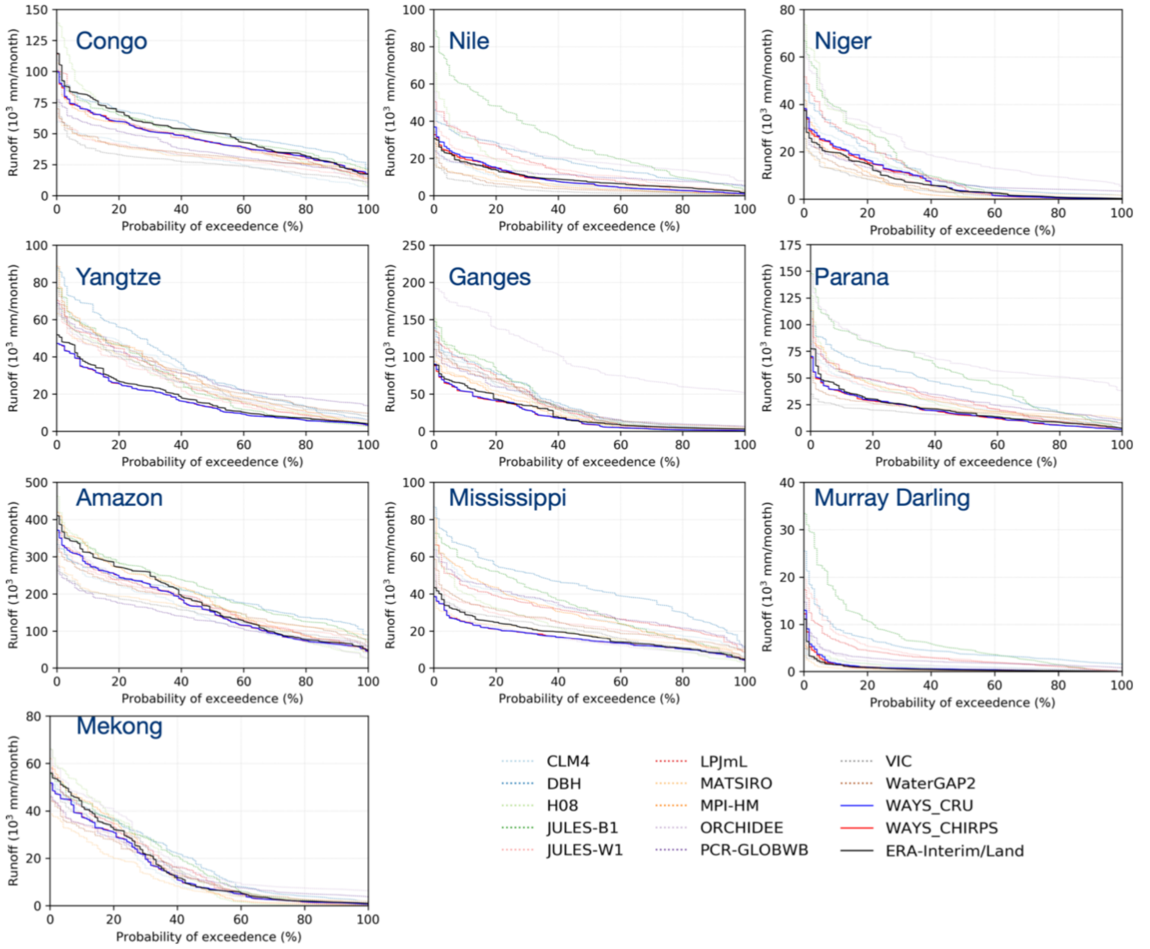


Figure 3. The probability of exceedance for monthly runoff simulated by different models as well as the reference data in ten selected basins. The solid lines in blue and red indicate WAYS simulations with two different RZSC products. The solid line in black indicates the ERA-Interim/Land data, and dashed lines represent the ISIMIP2a model simulations. In some plots, the red line is not visible and is covered by the blue line due to the small differences between the two WAYS runs. WAYS is calibrated using Composite Monthly Runoff data, while the ISIMIP2a models are not calibrated for the simulation.

5. The authors demonstrated the good performance of WAYS compared to ISIMIP2a models. However, no direct reasons are given to explain the better performances. I assume that the authors want to say that this is because of the better representation of the root zoon water storage in WAYS. The authors should make this point clear. It justifies the effort for developing WAYS in this paper. Also, it seems to me not very convincing to state that the better performance is really from the better representation of the root zoon water storage. Could some other processes in the WAYS model be also influential for the better performance compared with the results from the models in ISIMIP2a?

Thank you for the comment. In fact, the simulated runoff from WAYS is first compared with the reference data ERA-Interim/Land runoff. The performance of WAYS in runoff simulation is evaluated mainly based on the comparison between ERA-Interim/Land data and WAYS simulation.

Since WAYS uses the same driving data as the ISIMIP2a models and the ISIMIP2a simulations are widely studied and discussed in many studies, we believe the additional comparison between WAYS and ISIMIP2a models can provide added-value for examining our model. Therefore, ISIMIP2a simulations are also shown in the results together with the ERA-Interim/Land data. It is also important to state that the ISIMIP2a models are not calibrated for global simulation, which could explain the better performance of WAYS than the ISIMIP2a models.

However, it is not easy to justify the impacts of better representation of root zone water storage without the comparative experiment. In this regard, we have performed an experimental test to investigate whether the better performance is truly due to the better representation of the root zone water storage. Since this part could support the conclusion of this paper regarding the importance of correct representation of RZSC in models, we would like to include this it in the main text of the manuscript by including some figures in the Supplementary Information (SI). Please refer to the changes in the revised manuscript.

Authors' change in the manuscript.

Page 21, Line 26: (the following paragraphs are added)
RZSC is a key parameter of the WAYS model. Therefore, it is important to investigate how RZSC could affect the model simulation. In addition to the model simulated with satellite data-derived RZSC products ($S_{R,CHIRPS\text{–}CSM}$ and $S_{R,CRU\text{–}SM}$), we have additionally conducted WAYS simulations with RZSC derived from uncertain root depth and soil data. The uncertain RZSC ($S_{R,LOOKUP\text{–}TABLE}$) is derived based on literature values of root depth and soil texture data (Müller Schmied et al., 2014; Wang-Erlandsson et al., 2016). Due to the global coverage of the RZSC data ($S_{R,CRU\text{–}SM}$), only the simulation with $S_{R,CRU\text{–}SM}$ is used for comparison. The spatial distribution of the uncertain RZSC is shown in Figure S17, and the differences between $S_{R,CRU\text{–}SM}$ and $S_{R,LOOKUP\text{–}TABLE}$ are shown in Figure S18. It can be seen that there are large differences between the two RZSC products. The simulation with uncertain RZSC $S_{R,LOOKUP\text{–}TABLE}$ shows overestimation globally except for some regions around low-middle latitudes. The latitudinal averaged RZSC further confirms the overestimation of $S_{R,LOOKUP\text{–}TABLE}$ at middle-high latitudes (Figure S19).

The large differences between these two RZSC data sets also introduce differences in simulated hydrological elements. Figure S20 shows the impacts of RZSC on the model simulation, including runoff, evaporation and RZWS. A blue color (decrease of RMSE and increase of the ranked correlation) indicates an improvement of the simulated results by replacing the uncertain RZSC ($S_{R,LOOKUP\text{–}TABLE}$) with satellite data-derived RZSC ($S_{R,CRU\text{–}SM}$), while a red color implies the opposite. For comparison, reference data are used for different variables. For runoff, evaporation and RZWS, the reference data are ERA-Interim/Land (2001-2010, monthly), LandFluxEVAL (1989-2005, monthly) and NDII (2001-2010, 8-days), respectively. Generally, the model simulations are improved by using the RZSC $S_{R,CRU\text{–}SM}$. This result emphasizes the importance of an appropriate representation of RZSC in WAYS. A decline of the model performance is also found in some regions at high latitudes and low latitudes. This result can be partially explained by the inherent uncertainty in the $S_{R,CRU\text{–}SM}$ data, as they are derived from other data sets. The RZSC derivation method itself as well as the input data can also introduce biases (Wang-Erlandsson et al., 2016).

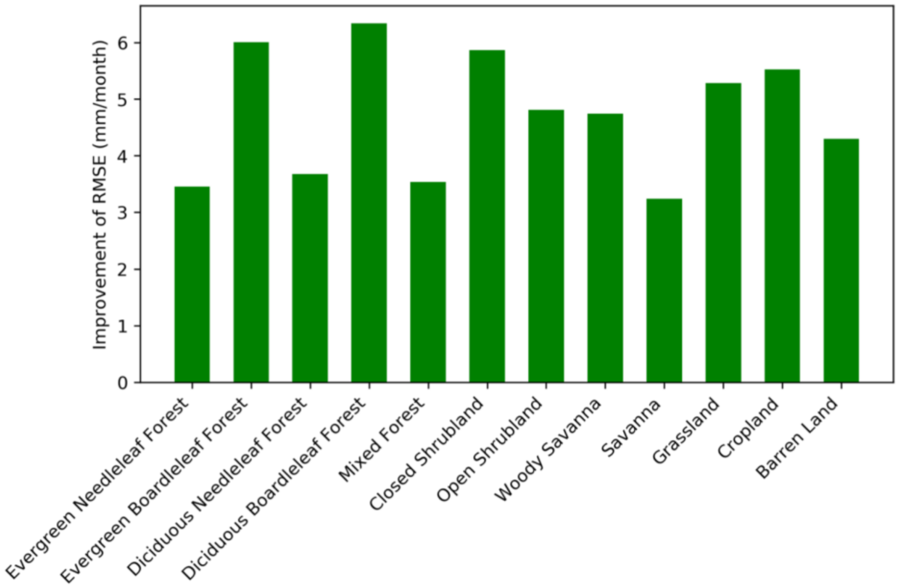


Figure 7. The improvement of RMSE in evaporation simulations for different land covers by using the satellite data-derived RZSC ($S_{R,CRU-SM}$) instead of the uncertain RZSC ($S_{R,LOOKUP-TABLE}$).

Figure 7 shows the RMSE improvements of simulated monthly evaporation for different land covers obtained by implementing the satellite data-derived RZSC ($S_{R,CRU-SM}$) instead of the uncertain RZSC ($S_{R,LOOKUP-TABLE}$). The analysis reveals that the satellite data-derived RZSC ($S_{R,CRU-SM}$) has great potential to improve the evaporation simulation for all kinds of land covers. The largest improvements are found in broadleaf forests. The improvements in the needleleaf forest, mixed forest and savanna are relatively low. The findings also resonate with another work that used a simple terrestrial evaporation to atmosphere model (STEAM) for evaporation simulation (Wang-Erlandsson et al., 2016).

The following figures can be found in the SI of this paper.

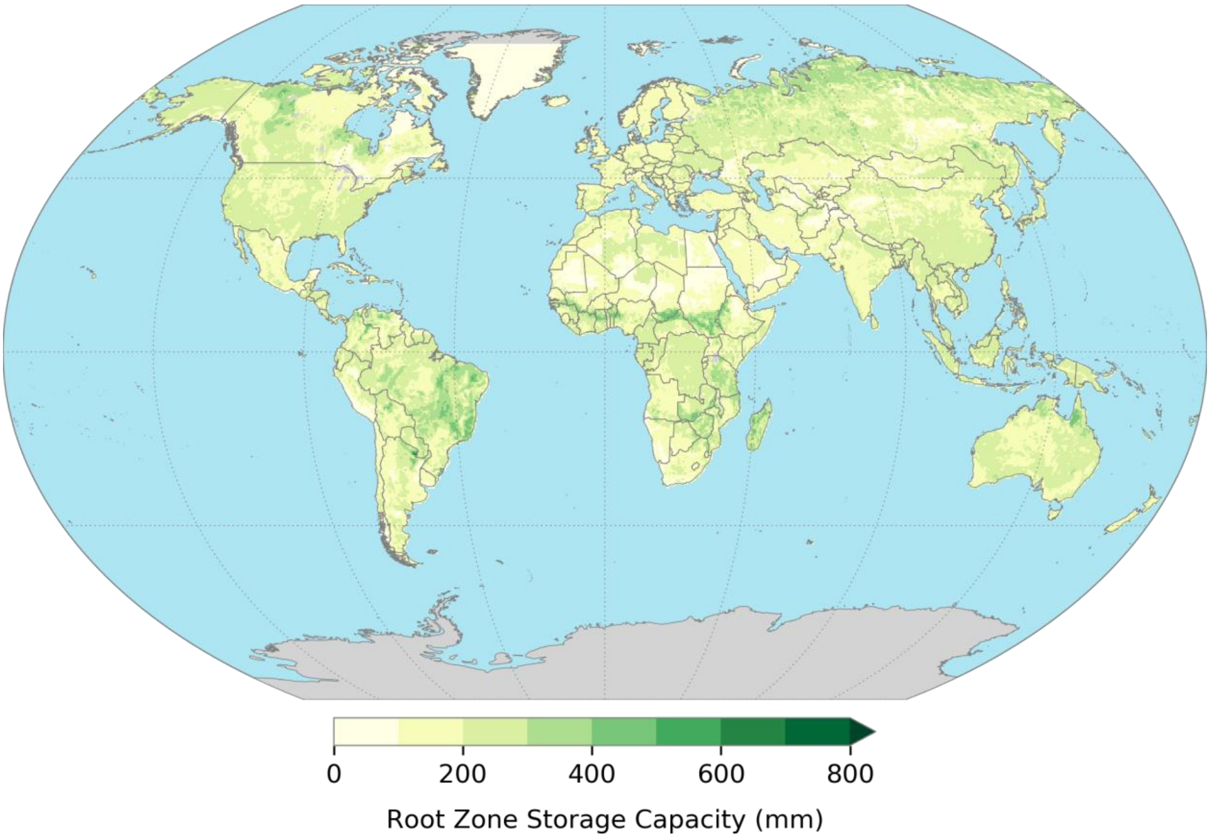


Figure S5. Spatial distribution of uncertain RZSC (SR,LOOKUP-TABLE).

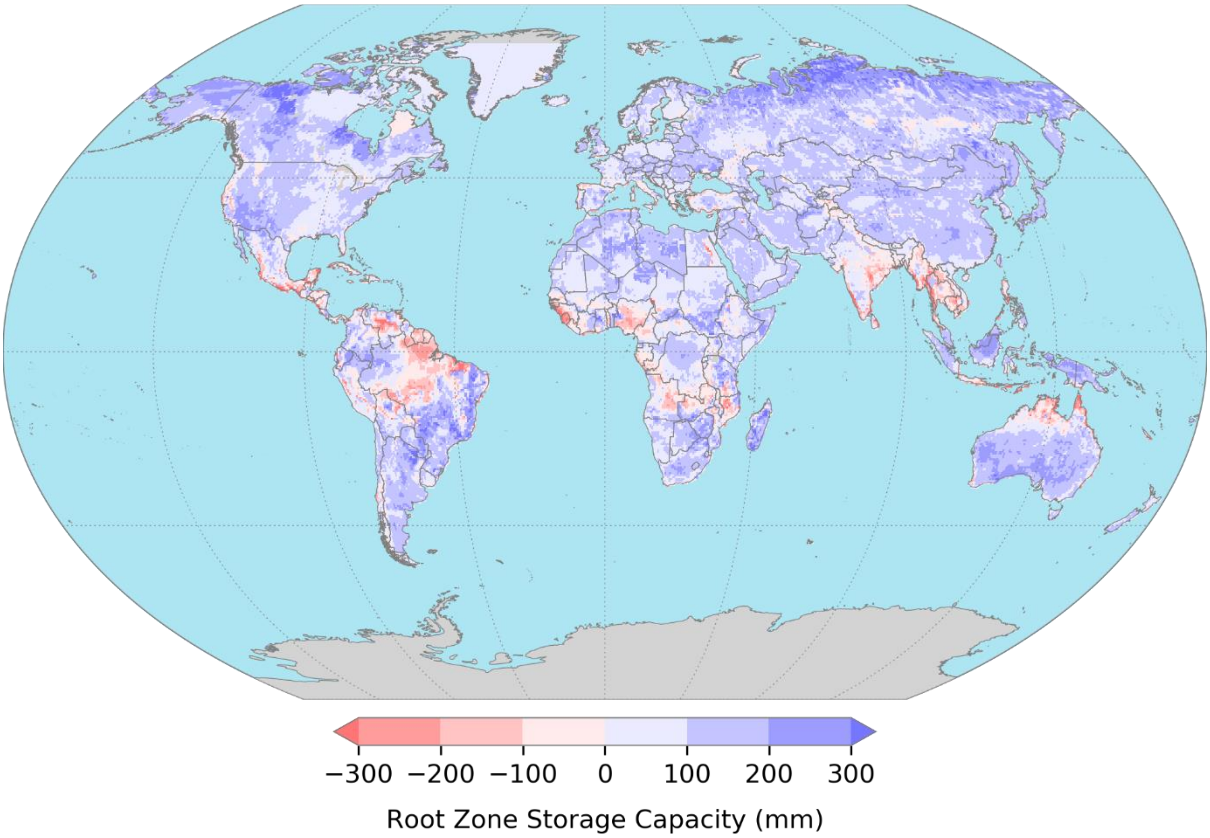


Figure S6. The difference between $S_{R,CRU\text{-}SM}$ and $S_{R,LOOKUP\text{-}TABLE}$ ($S_{R,LOOKUP\text{-}TABLE}$ - $S_{R,CRU\text{-}SM}$).

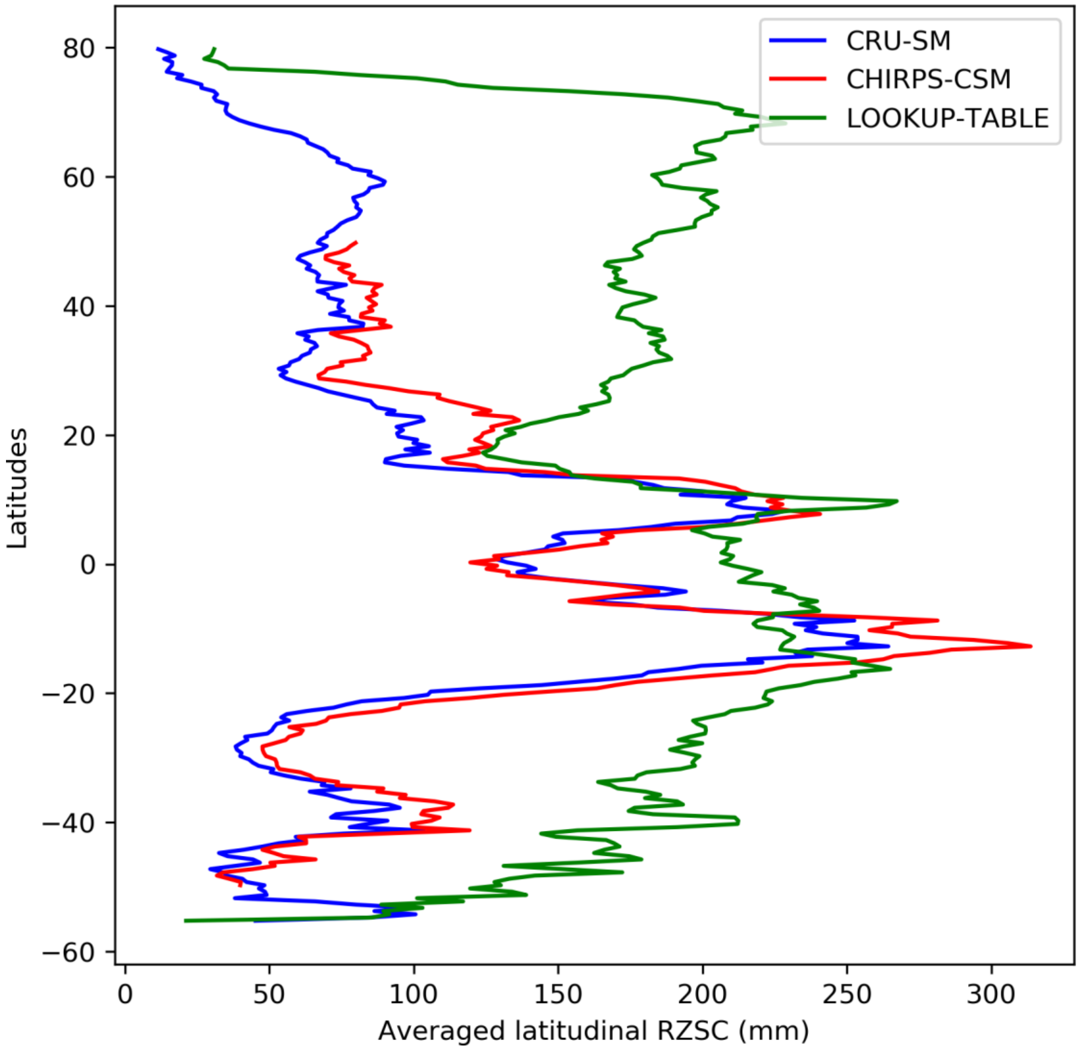


Figure S7. Latitudinal averaged RZSC of different products.

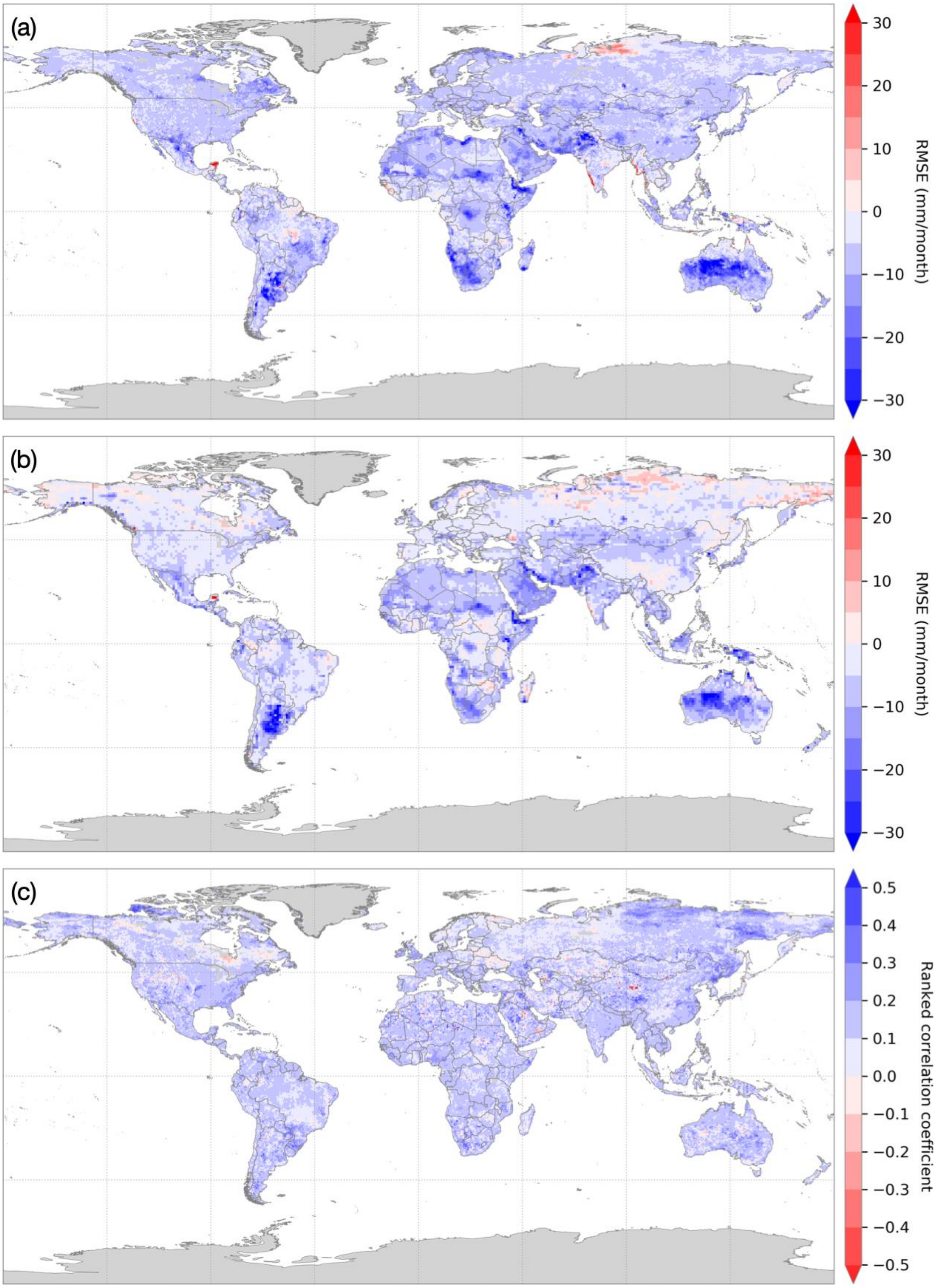


Figure S8. The impacts of RZSC on the model simulation. Blue color indicates the improvement of the simulated results by replacing the uncertain RZSC ($S_{R,LOOKUP\text{-}TABLE}$) with satellite data-derived RZSC ($S_{R,CRU\text{-}SM}$), while red color implies the opposite. (a) The result for runoff and the reference data for comparison is ERA-Interim/Land data (2001-2010, monthly), (b) the result for evaporation and the reference data for comparison is

LandFluxEVAL data (1989-2005, monthly), and (c) the result for RZWS and the reference data is NDII data (2001-2010, 8 days).

6. In Figure 4, the authors stated that in the Murray Darling basin, WAYS performed very well in comparison to the ERA data for runoff. In Figure 7, the difference between simulated root zone water storage and the NDII values is quite large. The similar situation is also seen in Mississippi, Amazon and Yangtze. The correlation values provided in Table 2 are rather low for these river basins. The authors stated that this could be caused by either the uncertainty of WAYS or the problem of using NDII as a proxy of root zone water storage in the specific river basin. In general, I think this is reasonable. However, I still feel that some specific reasons should be highlighted with convincing evidence, instead of just saying this is either due to the problem of WAYS or the use of NDII. Besides, in the discussion, it would be good if the authors can give some suggestions on validation of root zone water storage simulations when the validity of using NDII for validation is not so suitable as shown in the above mentioned river basins.

Thank you for the comment. Indeed, the runoff simulation in the Murray Darling basin is much better than RZWS. Since the model is calibrated to the runoff, the performance of the runoff generation could potentially surpass the other variables, e.g., RZWS and evaporation. However, we also agree with the referee that the large difference between NDII and simulated RZWS in some basins could imply other potential issues that may affect the simulation in addition to the model structure itself. We have further strengthened this part of the manuscript, and the corresponding changes can be found in the revised version (see "Authors' change in the manuscript.")

Moreover, we have also discussed the validation issue regarding the possible inappropriate representation of NDII in some basins.

Authors' change in the manuscript.

Page 20, Line 8: (the changes is marked as blue)
In contrast, WAYS shows a trend of underestimation in the Murray Darling. A possible reason could be that deep rooted plants are widespread across the Murray Darling basin and can tap into groundwater (Runyan and D'Odorico, 2010; Lamontagne et al., 2014); thus, the NDII may not be the correct proxy for moisture stress in this region. A vast amount of groundwater drawing from the saturated zone to the root zone could explain such underestimation of RZWS (Leblanc et al., 2011). Other reasons behind these findings could be the underestimated RZSC in this region as well as the intensive human activities, including dam construction, a water diversion system and river management, which will impact both the RZSC estimation and RZWS simulation (Reid et al., 2002; Kingsford, 2000).

Page 19, Line 20: (the changes is marked as blue)
In the Mississippi,
WAYS shows a good performance in large-value simulations, while it struggles to simulate low values, with considerable overestimation of them. Therefore, the rank correlation is also relatively low in this catchment, with values of approximately 0.67. The Mississippi river

basin is the northernmost catchment of our selected basins. The NDII here shows a totally different pattern compared to the others, while the WAYS-simulated RZWS can barely show a clear seasonal variation. There could be multiple reasons for this overestimation: our model has a relatively simple snowmelt module (degree-day method), which could consequently introduce biases into the simulation, especially in relatively cold regions. Additionally, the relatively uncertain forcing data could contribute to the mismatches between NDII and RZWS, as the largest uncertainties in precipitation occur mainly at the higher latitudes (Vinukollu et al., 2011). Some studies also reported that precipitation-induced spurious seasonal and interannual variations also exist in the soil moisture in this basin (Yang et al., 2015).

Page 24, Line 22: (the changes is marked as blue)
However, we have to highlight that the model shows lower performance in some regions, e.g., the Amazon, in the RZWS simulation, where the reference data NDII may have shortcomings in reflecting RZWS. In these regions where NDII might not be a correct proxy for RZWS, an additional data set could be helpful for evaluation, e.g., the solar-induced fluorescence (SIF), which reflects photosynthesis and thus has a close relationship to the available water in the root zone. A combination of vegetation index data, such as EVI and NDVI, could also be alternatives, as they represent different characteristics of plants. However, further investigations need to be performed before this combination can be applied.

7. Page 21, last paragraph. It is stated that 'this added value feature could benefit for many applications related to the root zone processes.' The authors should specify some of the potential benefits here.

Thank you. We have specified the potential benefits of the developed model accordingly. The updates can be found in the revised manuscript.

Authors' change in the manuscript.

Page 28, Line 32: (the changes is marked as blue)
This added-value feature could benefit for many applications related to the root zone processes. For instance, the correct representation of RZWS could help the researchers in the investigation of land-vegetation-climate-water integrations, where RZWS plays a key role. The capacity of RZWS simulation could also bring benefit to the field of agriculture, as RZWS represents the plant available water that closely linked with the crop yields.

8. The aim of the paper is to develop WAYS which is capable of simulating root zone water storage. In the model evaluation section, much text is about the validation of runoff. The elaboration of the importance to correctly represent root zone water storage and the good performance of WAYS in realizing this goal is relatively brief. It would be good if the authors can strengthen this part of the text to highlight the accomplishment of the paper.

Thank you. We agree with the referee that the elaboration of the importance of correct representation of root zone water storage is relatively brief. Therefore, we have performed additional work on the model evaluation to strength this portion of the manuscript. We provide a detailed reply regarding this issue in the previous comment section (comment 5). To avoid repetition, we would like to refer to the response to comment 5. The corresponding revision in the manuscript can also be found there.

9. I like the philosophy stated in the end of the paper, 'get the right answers for the right reasons rather than simply to get the right answers'. In this paper, I feel that the right results are clearly shown. But the right reasons, to me, are relatively weak. The good performance in runoff and root zone water storage simulations could be good results, but reasons for the good results needs to be more clearly and explicitly explained and supported by evidence.

Thank you for the comment. We agree with the referee that in the current version of the paper, the model evaluation part is relatively weak. Hence, we have performed an additional evaluation to demonstrate the importance of proper representation of the RZSC in hydrological models. We provide a detailed reply regarding this issue in the previous section (comment 5). To avoid repetition, we would like to refer to the response to comment 5. A comparative experiment is established to observe the impacts of RZSC. The results reveal that correct representation of the RZSC could significantly improve the model simulation, including runoff, evaporation and RZWS. This finding also confirms one of the objectives of our paper regarding the advanced hydrological philosophy to "get the right answers for the right reasons rather than simply to get the right answers".

Specific comments

10. The window in Figure 1 should be enlarged, as it is important to show components and their connections clearly. Anyway, there is space in Figure to accommodate the enlargement.

Thank you for the comment. It is addressed together with the general comment 1 by enlarging the flowchart in Figure 1.

11. The manuscript contains many typos and grammatical mistakes. A professional editing of the manuscript is necessary, particularly because I think the paper has the potential to be an important paper in the field and could receive a high citation in the coming years.

Thank you for the comment. The revised manuscript has now been edited by a professional academic language and manuscript service company.

All the references are included in the manuscript.