

# TIAN ZHOU

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## EDUCATION

Ph.D., 2012	<b>Water Resources Engineering</b> , State University of New York, College of Environmental Science and Forestry (SUNY-ESF) in Association with Syracuse University, Syracuse, NY
M.S., 2007	<b>Quaternary Geology</b> , Lanzhou University, China
B.S., 2004	<b>Geological Science</b> , Lanzhou University, China

## APPOINTMENT

Dec. 2021 – present	<b>Team Leader</b> , Land System Modeling Team, ACES, PNNL
Oct. 2017 – present	<b>Scientist</b> , Atmospheric, Climate, & Earth Sciences (ACES) Division, Pacific Northwest National Laboratory, Richland, WA
Oct. 2015 – Sep. 2017	<b>Research Associate</b> , Atmospheric Sciences & Global Change Division, Pacific Northwest National Laboratory, Richland, WA
Oct. 2012 – Oct. 2015	<b>Research Associate</b> , Dept. of Civil and Environmental Engineering, University of Washington, Seattle, WA
Aug. 2010 - Aug. 2012	<b>Research Analyst</b> , USDA Forest Service Northern Research Station, Syracuse, NY
Aug. 2007 - Aug. 2010	<b>Research Assistant</b> , Dept. of Environmental Resources Engineering, SUNY ESF, Syracuse, NY

## REFEREED PUBLICATIONS (Citations: 2578, H-index: 26 as of Dec. 2024 by [Google Scholar](#))

- 55) Yao, Y.; A. Ducharne, B. I. Cook, S. J. De Hertog, K. S. Aas, P. F. Arboleda-Obando, J. Buzan, J. Colin, M. Costantini, B. Decharme, D. M. Lawrence, P. Lawrence, L. Leung, M-H Lo, D. Narayanappa, W. Wieder, R-J Wu, **T. Zhou**, J. Jagermeyr, S. McDermid, Y. Pokhrel, M. Elling, N. Hanasaki, P. Munoz, L. Nazarenko, K. Otta, Y. Satoh, T. Yokohata, L. Jin, X. Wang, V. Mishra, S. Ghosh, W. Thiery (2025) Impacts of Irrigation Expansion on Moist-heat Stress: First Results from IRRMIP **Nature Communications** <https://doi.org/10.1038/s41467-025-56356-1>
- 54) Thurber T. B., D. Broman, **T. Zhou**, and N. Voisin. (2024) wmpy-power: A Python package for process-based regional hydropower simulation. **The Journal of Open Source Software** <https://doi.org/10.21105/joss.07225>

- 53) Feng D., Z. Tan, D. Engwirda, J.D. Wolfe, D. Xu, C. Liao, and G. Bisht, J. Benedict, **T. Zhou**, H-Y, Li, and L. Leung. (2024) Simulation of Compound Flooding using River-Ocean Two-way Coupled E3SM Ensemble on Variable-resolution Meshes. *Journal of Advances in Modeling Earth Systems* <https://doi.org/10.1029/2023MS004054>
- 52) Xu D., G. Bisht, Z. Tan, E. Sinha, A.V. Di Vittorio, **T. Zhou**, and V. Ivanov, et al. (2024). Climate change will reduce wetland areas and disrupt their seasonal regimes in North America *Nature Communications* <https://doi.org/10.1038/s41467-024-45286-z>
- 51) Tran H.V., Y. Fang, Z. Tan, **T. Zhou**, and L. Leung. (2024). Quantifying the impacts of land cover change on the hydrologic response to Hurricane Ida in the Lower Mississippi River Basin. *Journal of Hydrometeorology* <https://doi.org/10.1175/JHM-D-23-0094.1>
- 50) Xu D., G. Bisht, Z. Tan, C. Liao, **T. Zhou**, H. Li, and L. Leung. (2024). Disentangling the Hydrological and Hydraulic Controls on Streamflow Variability in E3SM V2 – A Case Study in the Pantanal Region. *Geoscientific Model Development* <https://doi.org/10.5194/gmd-17-1197-2024>
- 49) Harrop, B; K. Balaguru, C. Golaz, L. R. Leung, S. Mahajan, A. Rhoades, P. Ullrich, C. Zhang, X. Zheng, **T. Zhou**, D. Bader, P. Caldwell, N. Keen, and A. Mameetjanov (2023). Evaluating the Water Cycle Over CONUS at the Watershed Scale for the Energy Exascale Earth System Model Version 1 (E3SMv1) Across Resolutions. *Journal of Advances in Modeling Earth Systems* <https://doi.org/10.1029/2022MS003490>
- 48) Liao, C.; **T. Zhou**, D. Xu, Z. Tan, G. Bisht, M. Cooper, D. Engwirda, H. Y. Li, R. Leung, (2023). Topological Relationship-based Flow Direction Modeling: Stream Burning and Depression Filling. *Journal of Advances in Modeling Earth Systems* <https://doi.org/10.1029/2022MS003487>
- 47) Cooper M.G., and **T. Zhou**. (2023). baseflow: a MATLAB and GNU Octave package for baseflow recession analysis. *Journal of Open Source Software* <https://doi.org/10.21105/joss.05492>
- 46) Pachev B.A., L. Leung, **T. Zhou**, and C. Dawson. (2023) One-way coupling of E3SM with ADCIRC demonstrated on Hurricane Harvey. *Nat. Hazards* <https://doi.org/10.1007/s11069-023-06192-7>
- 45) Tang, Q.; J-C. Golaz, L. P. Van Roekel, M. A. Taylor, W. Lin, B. R. Hillman, P. A. Ullrich, A. M. Bradley, O. Guba, J. D. Wolfe, **T. Zhou**, ...30 coauthors...; and D. C. Bader (2023). The Fully Coupled Regionally Refined Model of E3SM Version 2: Overview of the Atmosphere, Land, and River. *Geoscientific Model Development* <https://doi.org/10.5194/gmd-16-3953-2023>
- 44) Silva S.J., S.M. Burrows, K.V. Calvin, P.J. Cameron-Smith, X. Shi, and **T. Zhou**. (2023) Contrasting the biophysical and radiative effects of rising CO2 concentrations on ozone dry deposition fluxes. *Journal of Geophysical Research: Atmospheres* <https://doi.org/10.1029/2022JD037668>
- 43) **Zhou, T**; S-C. Kao; W. Xu; S. Gangrade; and N. Voisin (2023). Impacts of climate change on subannual hydropower generation: a multi-model assessment of the United States federal hydropower plant. *Environmental Research Letters* <https://doi.org/10.1088/1748-9326/acb58d>
- 42) Liao, C.; **T. Zhou**, D. Xu, M. Cooper, D. Engwirda, H. Y. Li, R. Leung (2023). Topological relationships-based flow direction modeling: Mesh-independent river networks representation. *Journal of Advances in Modeling Earth Systems* <https://doi.org/10.1029/2022MS003089>

- 41) Cooper, M., **T. Zhou**, B. Katrina, W. Bolton, E. Coon, S. Fleming, J. Rowland, J. Schwenk (2023). Detecting Permafrost Active Layer Thickness Change from Nonlinear Baseflow Recession. **Water Resources Research** <https://doi.org/10.1029/2022WR033154>
- 40) Feng, D., Z. Tan, D. Engwirda, C. Liao, D. Xu, G. Bisht, **T. Zhou**, H-Y. Li, R. Leung (2022). Investigating coastal backwater effects and flooding in the coastal zone using a global river transport model on an unstructured mesh. **Hydrology and Earth System Sciences** <https://doi.org/10.5194/hess-26-5473-2022>
- 39) Zhang, C., J. Golaz, R. Forsyth, T. Vo, S. Xie, Z. Shaheen, G. Potter, X. S. Asay-Davis, C. S. Zender, W. Lin, C. Chen, C. R. Terai, S. Mahajan, **T. Zhou**, K. Balaguru, Q. Tang, C. Tao, Y. Zhang, T. Emmenegger, and P. Ullrich (2022). The E3SM Diagnostics Package (E3SM Diags v2.7): A Python-based Diagnostics Package for Earth System Models Evaluation. **Geoscientific Model Development** <https://doi.org/10.5194/gmd-15-9031-2022>
- 38) Golaz, C; L. P. Van Roekel; X. Zheng; A. Roberts; J. D. Wolfe; W. Lin; A. Bradley; Q. Tang; M. Maltrud; R. Forsyth; C. Zhang; **T. Zhou**; ...57 coauthors...; D. C. Bader (2022). The DOE E3SM Model Version 2: Overview of the physical model. **Journal of Advances in Modeling Earth Systems** <https://doi.org/10.1029/2022MS003156> (Voisin et al., 2018)
- 37) Kao, Shih-Chieh, Ashfaq, Moetasim, Rastogi, Deeksha, Gangrade, Sudershan, Uria Martinez, Rocio, Fernandez, Alisha, Konapala, Goutam, Voisin, Nathalie, **Zhou, Tian**, Xu, Wenwei, Gao, Huilin, Zhao, Bingjie, and Zhao, Gang. (2022) **The Third Assessment of the Effects of Climate Change on Federal Hydropower.**, <https://doi.org/10.2172/1887712>
- 36) Xu, D.; G. Bisht, **T. Zhou**, L. R. Leung, and M. Pan (2022). Development of Land-River Two-Way Coupling in the Energy Exascale Earth System Model. **Journal of Advances in Modeling Earth Systems** <https://doi.org/10.1029/2021MS002772>
- 35) Eldardiry H.; **T. Zhou**, M. Huang, O. Chegwiddden (2022). The Role of Groundwater Withdrawals on River Regulation: Example from the Columbia River Basin. **Water Resources Research** <https://doi.org/10.1029/2020WR028955>
- 34) Zheng, X.; Q. Li, **T. Zhou**, Q. Tang, L. Van Roekel, and C. Golaz (2022). Description of historical and future projection simulations by the global coupled E3SMv1.0 model as used in ScenarioMIP and DAMIP of CMIP6. **Geoscientific Model Development** <https://doi.org/10.5194/gmd-15-3941-2022>
- 33) Sun, N.; H. Yan, M. Wigmosta, J. Lundquist, S. Dickerson-Lange, and **T. Zhou** (2022). Variability of Forest Canopy Effects on Snowpack Dynamics across the Climate Gradients of the Western United States Mountain Ranges. **Water Resources Research** <https://doi.org/10.1029/2020WR029194>
- 32) Liao, C.; **T. Zhou**, D. Xu, R. Barnes, G. Bisht, H. Y. Li, Z. Tan, T. Tesfa, Z. Duan, D. Engwirda, and R. Leung (2022). Advances in modeling flow direction on a hexagon mesh grid. **Advances in Water Resources** <https://doi.org/10.1016/j.advwatres.2021.104099>
- 31) Li, H-Y, Z. Tan, H. Ma, Z. Zhu, G. Abeshu, S. Zhu, S. Cohen, **T. Zhou**, D. Xu, and L. R. Leung (2022). A new large-scale suspended sediment model and its application over the United States. **Hydrology and Earth System Sciences** <https://doi.org/10.5194/hess-26-665-2022>

- 30) Cheng, Y; M. Huang, B. Zhu, **T. Zhou**, Y. Liu, and X. He (2021). Validation of the Version 5 of the Community Land Model over the Contiguous United States (CONUS) using in-situ and remote sensing datasets. *Journal of Geophysical Research: Atmosphere* <https://doi.org/10.1029/2020JD033539>
- 29) Burrows, S. M.; ... 13 coauthors... **T. Zhou**; ... 15 coauthors; and L. R. Leung (2020). The DOE E3SM coupled model v1.1 biogeochemistry configuration: overview and evaluation of coupled carbon-climate experiments. *Journal of Advances in Modeling Earth Systems* <https://doi.org/10.1029/2019MS001766>
- 28) **Zhou, T**; L. R. Leung; G. Leng; N. Voisin; H. Li; A. P. Craig; T. Tesfa; and Y. Mao (2020). Global irrigation characteristics and effects simulated by fully coupled land surface, river, and water management models in E3SM. *Journal of Advances in Modeling Earth Systems* <https://doi.org/10.1029/2020MS002069>
- 27) Voisin, N; A. Dyreson; T. Fu; M. O'Connell; S. Turner; **T. Zhou**; and J. Macknick (2020). Impact of climate change on water availability and its propagation through the Western US power grid. *Applied Energy* <https://doi.org/10.1016/j.apenergy.2020.115467>
- 26) **Zhou, T**; T. Endreny (2020). The Straightening of a River Meander Leads to Extensive Losses in Flow Complexity and Ecosystem Services. *Water* <https://doi.org/10.3390/w12061680>
- 25) Shah, H; **T. Zhou**; N. Sun; M. Huang, and V. Mishra (2019). Roles of irrigation and reservoir operations in modulating terrestrial water budgets in the Indian sub-continental river basins. *Journal of Geophysical Research: Atmosphere* <https://doi.org/10.1029/2019JD031059>
- 24) Caldwell, P. M.; ... 31 coauthors...; **T. Zhou** (2019). The DOE E3SM coupled model version 1: Description and results at high resolution. *Journal of Advances in Modeling Earth Systems* <https://doi.org/10.1029/2019MS001870>
- 23) Mao, Y; **T. Zhou**, L. R. Leung, T. Tesfa, H.-Y. Li, K. Wang, Z. Tan, A. Getirana (2019). Flood Inundation Generation Mechanisms and Their Changes in 1953-2004 in Global Major River Basins. *Journal of Geophysics Research: Atmospheres* <https://doi.org/10.1029/2019JD031381>
- 22) Golaz, C; ...80 coauthors...; **T. Zhou**; Q. Zhu (2019). The DOE E3SM coupled model version 1: Overview and evaluation at standard resolution. *Journal of Advances in Modeling Earth Systems* <https://doi.org/10.1029/2018MS001603>
- 21) Shah, H; **T. Zhou**, M. Huang, M. Vimal (2019). Strong influence of irrigation on water budget and land surface temperature in Indian sub-continental river basins. *Journal of Geophysical Research: Atmospheres* <https://doi.org/10.1029/2018JD029132>
- 20) Bao, J; **T. Zhou**; M. Huang; Z. Hou, W. Perkins, S. Harding, G. Hammond, H. Ren, P. Thorne, S. Suffield, and J. Zachara (2018) Modulating factors of hydrologic exchanges in a large-scale river reach: insights from three-dimensional computational fluid dynamics simulations. *Hydrological Processes* <https://doi.org/10.1002/hyp.13266>
- 19) **Zhou, T**; N. Voisin, T. Fu (2018) Non-stationary hydropower generation projections constrained by environmental and electricity grid operations over the western United States. *Environmental Research Letters* <https://doi.org/10.1088/1748-9326/aad19f>

- 18) Wartenburger, R; ...37 coauthors... **T. Zhou (2018)**. Evapotranspiration simulations in ISIMIP2a - Evaluation of spatio-temporal characteristics with a comprehensive ensemble of independent datasets. *Environmental Research Letters* <https://doi.org/10.1088/1748-9326/aac4bb>
- 17) Sun, N; M. Wigmosta, **T. Zhou**, J. Lundquist, S. Dickerson-Lange, N. Cristea **(2018)**. Evaluating the functionality and streamflow impacts of explicitly modeling forest-snow interactions and canopy gaps in a distributed hydrologic model. *Hydrological Processes* <https://doi.org/10.1002/hyp.13150>
- 16) **Zhou, T**; J. Bao, M. Huang, Z. Hou, E. Arntzen, R. Mackley, S. Harding, Y. Xu, X. Song, X. Chen, J. Stegen, G. Hammond, P. Thorne, and J. Zachara **(2018)** Riverbed hydrologic exchange dynamics in a large regulated river reach. *Water Resources Research* <https://doi.org/10.1002/2017WR020508>
- 15) **Zhou, T**; N. Voisin; G. Leng; and M. Huang **(2018)**. Sensitivity of regulated flow regime to climate change in the Western United States. *Journal of Hydrometeorology* <https://doi.org/10.1175/JHM-D-17-0095.1>
- 14) Zhang, Y; M. Pan; J. Sheffield; A. Siemann; C. Fisher; M. Liang; H. Beck; N. Wanders; R. MacCracken; P. R. Houser; **T. Zhou**; D. P. Lettenmaier; Y. Ma; R. T. Pinker; J. Bytheway; C. D. Kummerow; and E. F. Wood. **(2018)**. A Climate Data Record (CDR) for the global terrestrial water budget: 1984–2010. *Hydrology and Earth System Sciences*. <https://doi.org/10.5194/hess-22-241-2018>
- 13) Bisht, G; M. Huang; **T. Zhou**; X. Chen; H. Dai; G. Hammond; W. Riley; J. Downs; Y. Liu; and J. Zachara. **(2017)**. Coupling a three-dimensional subsurface flow and transport model with a land surface model to simulate stream-aquifer-land interactions (CP v1.0). *Geoscientific Model Development* <https://doi.org/10.5194/gmd-10-4539-2017>
- 12) Yuan, X; M. Zhang; L. Wang; and **T. Zhou**. **(2017)**. Understanding and seasonal forecasting of hydrological drought in the Anthropocene. *Hydrology and Earth System Sciences* <https://doi.org/10.5194/hess-21-5477-2017>
- 11) Voisin, N; M. Kintner-Meyer; D. Wu, R. Skaggs; T. Fu; **T. Zhou**; T. Nguyen; and I. Kraucunas. **(2017)**. Opportunities for joint water-energy management: sensitivity of the 2010 Western U.S. electricity grid operations to climate oscillations. *Bulletin of the American Meteorological Society*. <https://doi.org/10.1175/BAMS-D-16-0253.1>
- 10) **Zhou, T**; M. Huang; J. Bao; Z. Hou; E. Arntzen; R. Mackley; A. Crump; A. E. Goldman; X. Song; Y. Xu; and J. Zachara. **(2017)** A New Approach to Quantify Shallow Water Hydrologic Exchanges in a Large Regulated River Reach. *Water*. <https://doi.org/10.3390/w9090703>
- 9) **Zhou, T**; B. Nijssen; H. Gao; and D.P. Lettenmaier. **(2016)**. The contribution of reservoirs to global land surface water storage variations. *Journal of Hydrometeorology*. <https://doi.org/10.1175/JHM-D-15-0002.1>
- 8) **Zhou, T**; I. Haddeland; B. Nijssen; and D. P. Lettenmaier. **(2016)**. Human induced changes in the global water cycle. *Terrestrial Water Cycle and Climate Change: Natural and Human-Induced Impacts; Geophysical Monograph* 221; 57. <https://doi.org/10.1002/9781118971772.ch4>
- 7) **Zhou, T**; B. Nijssen; G. J. Huffman; and D. P. Lettenmaier. **(2014)**. Evaluation of real-time satellite precipitation data for global drought monitoring. *Journal of Hydrometeorology*. <https://doi.org/10.1175/JHM-D-13-0128.1>

- 6) Nijssen, B; S. Shukla; C. Lin; H. Gao; **T. Zhou**; J. Sheffield; E. F. Wood; and D. P. Lettenmaier. (2014). A prototype global drought information system based on multiple land surface models. *Journal of Hydrometeorology*. <https://doi.org/10.1175/JHM-D-13-090.1>
- 5) **Zhou, T**; and T. A. Endreny. (2013). Reshaping of the hyporheic zone beneath river restoration structures: flume and hydrodynamic experiments. *Water Resources Research*. <https://doi.org/10.1002/WRCR.20384>
- 4) **Zhou, T**; and T. A. Endreny. (2012). Meander hydrodynamics initiated by river restoration deflectors. *Hydrological Processes*. <https://doi.org/10.1002/hyp.8352>
- 3) **Zhou, T**; B. Pan; X. Liu; H. Su; and Z. Hu. (2008). The discovery of ice-wedge casts in Ordos Plateau; China and permafrost boundary establishment (in Chinese with English abstract). *Journal of Glaciology and Geocryology* <http://bcdt.westgis.ac.cn/CN/abstract/abstract415.shtml>
- 2) Pan, B; H. Su; X. Liu; X. Hu, **T. Zhou**; C. Hu; and J. Li; (2007). River terraces of the Yellow River and their genesis in eastern Lanzhou Basin during last 1.2 Ma (in Chinese with English abstract). *Quaternary Sciences*. <http://www.dsjy.com.cn/CN/abstract/abstract9193.shtml>
- 1) Pan, B; H. Su; C. Hu; X. Hu; **T. Zhou**; and J. Li. (2007). Discovery of a 1.0 Ma Yellow River terrace and re-dating of the fourth Yellow River terrace in Lanzhou area. *Progress in Natural Science*. <https://doi.org/10.1080/10020070612331343246>

## PUBLICATIONS IN REVIEW/REVISION/PRESS

- Liao, C; D. Xu; M. G. Cooper; **T. Zhou**; D. Engwirda; Z. Tan; G. Bisht; H-Y Li; L. Li; D. Feng; L. Leung (**in review**) Evaluation of flow routing on the unstructured Voronoi meshes in earth system modeling *Journal of Advances in Modeling Earth Systems*
- Solander, K; **T. Zhou**; K. E. Bennett; J. Schwenk (**in review**) Evaluation of CMIP6 streamflow in the Arctic. *Journal of Hydrometeorology*
- Tan, Z.; D. Xu; **T. Zhou**; D. Feng; L. Li; M. Cooper; C. Liao; G. Bisht; G. Abeshu; H-Y. Li; A. Kassam; L. Leung (**in review**) The past and future changes of river sediment in the U.S. Mid-Atlantic. *Earth's Future*
- Tran, Hoang; **T. Zhou**, Z. Tan, Y. Fang, L. Leung (**in review**) Improving the prediction of daily reservoir releases over the CONUS using conditioned LSTM. *Journal of Hydrology*

## DATA

- Zhou, T**; S-C, Kao; W. Xu; S. Gangrade; N. Voisin (2022) Multi-model Hydropower Projections for the United States Federal Power Marketing Areas under CMIP5 Climate Change Conditions. <https://doi.org/10.5281/zenodo.6506088>
- Voisin, N; A. Dyreson; T. Fu; M. O'Connell; S. Turner; **T. Zhou**; and J. Macknick (2020). Impact of climate change on water availability and its propagation through the Western US power grid: PLEXOS Inputs and outputs. <https://doi.org/10.25584/data.2020-06.1318/1635205> and <https://doi.org/10.25584/data.2020-06.1319/1635208>
- Gosling, S; H. Müller Schmied; R. Betts; J. Chang; P. Ciaisi; R. Dankers; P. Döll; S. Eisner; M. Flörke; D. Gerten; M. Grillakis; N. Hanasaki; S. Hagemann; M. Huang; Z. Huang; S. Jerez; H. Kim; A. Koutroulis; G. Leng; X. Liu; Y. Masaki; P. Montavez; C. Morfopoulos; T. Oki; L. Papadimitriou; Y. Pokhrel; F.



Portmann; R. Orth; S. Ostberg; Y. Satoh; S. Seneviratne; P. Sommer; T. Stacke; Q. Tang; I. Tsanis; Y. Wada; **T. Zhou**; M. Büchner; J. Schewe; F. Zhao (2017): ISIMIP2a Simulation Data from Water (global) Sector. GFZ Data Services. <https://doi.org/10.5880/PIK.2017.010>

## NON-REFEREED PUBLICATIONS

Nowak, David J.; R. E. Hoehn III; A. R. Bodine; E. J. Greenfield; A. Ellis; T. A. Endreny; Y. Yang; **T. Zhou**; R. Henry (2013): Assessing urban forest effects and values: Toronto's urban forest. *Resour. Bull. NRS-79*; U.S. Department of Agriculture, Forest Service, Northern Research Station. 59 p.  
<https://doi.org/10.2737/NRS-RB-79>.

## PRESENTATIONS (Selected)

- Zhou T. 2024.** (invited lecture) [River Modeling in E3SM](#). 2024 E3SM Tutorial Workshop, *National Energy Research Scientific Computing Center, Berkeley, CA*
- Zhou T.,** M. Cooper, C. Liao, D. Xu, D. Engwirda, N. Sun, Z. Tan, H-Y. Li, D. Feng, G. Bisht, L. Leung. **2023.** Modeling Inter-Basin Water Transfer in E3SM: A Delaware River Basin Case Study. *American Geophysical Union Fall Meeting, San Francisco, CA*
- Liao C., **T. Zhou**, D. Engwirda, D. Xu, M.G. Cooper, Z. Tan, G. Bisht, H-Y Li, L. Leung. **2023.** Evaluation of river routing on an unstructured mesh in E3SM. *American Geophysical Union Fall Meeting, San Francisco, CA*
- Zhou T. 2023.** (invited lecture) Hydroelectricity Modeling. *Global Climate: Physical Modeling (GCEE6320), University of Houston, Houston, Texas.*
- Zhou T. 2023.** (invited talk) [Irrigation modeling in Energy Exascale Earth System Model \(E3SM\)](#). *Aspen Global Change Institute (AGCI) Workshop: Irrigation in the Earth System: Priorities for Data, Modeling, and Cross-disciplinary Research, Aspen, Colorado.*
- Zhou T.,** L. Leung, and D. Xu. **2020.** Changes in flood characteristics in the future. *American Geophysical Union Fall Meeting*
- Eldardiry H.A., **T. Zhou**, and M. Huang, **2020.** The Role of Groundwater Withdrawals on River Regulation: Example from the Columbia River Basin *American Meteorological Society Meeting, Boston, Massachusetts.*
- Zhou, T,** R. Leung, N. Voisin, H. Li, G. Leng, T. Tesfa, **2018.** Global irrigation water withdrawal simulated by fully coupled land surface, river, and water management models. *American Geophysical Union Fall Meeting, Washington, DC*
- Zhou, T,** N. Voisin, T. Fu, **2017.** Non-stationary hydropower generation projection over the western United States. *American Geophysical Union Fall Meeting, New Orleans, LA*
- Zhou, T,** J. Bao, M. Huang, Z. Hou, E. Arntzen and R. Mackley, **2016.** Quantifying hyporheic exchange dynamics in a highly regulated large river reach. *American Geophysical Union Fall Meeting, San Francisco, CA*
- Zhou, T.,** B. Nijssen, I. Haddeland, H. Gao, and D. P. Lettenmaier. **2014.** Reservoir in Global Water Cycle: Macro Scale Hydrologic Modeling for Water Management. *American Geophysical Union Fall Meeting, San Francisco, CA*

- Zhou, T.**, B. Nijssen, I. Haddeland, and D. P. Lettenmaier. **2013**. Macro Scale Hydrologic Modeling for Water Management: Re-construction of Large Reservoir Storage Time Series in the Continental U.S. *American Geophysical Union Fall Meeting, San Francisco, CA*
- Lettenmaier, D. P., **T. Zhou**, G. J. Huffman, and B. Nijssen. **2013**. Evaluation of TMPA v7 Real-Time Precipitation for Global Hydrologic Prediction. *The 3<sup>rd</sup> International Workshop on Global Flood Monitoring & Modelling, College Park, MD, USA*
- Zhou, T.**, A. S. Ward, B. L. O'Connor, and T. A. Endreny. **2012**. Floodplain Hyporheic Response under Dam Release Hydrographs. *American Geophysical Union Fall Meeting, San Francisco, CA*
- Zhou, T.**, and T. A. Endreny. **2011**. Hydrodynamic impacts of disrupting point bar steering with river restoration structures. *American Geophysical Union Fall Meeting, San Francisco, CA*
- Zhou, T.**, and T. A. Endreny. **2011**. Changes of hydraulic patterns with in-channel restoration structures at a point bar. *11<sup>th</sup> Annual Meeting of the American Ecological Engineering Society, Ashville, NC*
- Zhou, T.**, and T. A. Endreny. **2010**. Flume analysis of in-channel restoration structures and impacts to secondary circulation flows. *World Congress of the International Commission of Agricultural and Biosystems Engineering, Quebec City, Canada*
- Zhou, T.**, and T. A. Endreny. **2010**. Hyporheic exchange flow around in-channel restoration structures: simulation and flume experiments. *Association of American Geographers Annual Meeting, Washington, DC*
- Zhou, T.**, and T. A. Endreny. **2009**. (invited talk) Hydraulic impacts of in-channel restoration structures in a meander band: simulation with CFD. *Workshop of Techniques for Evaluating Water Resources in the Finger Lakes, sponsored by United States Geological Survey, Finger Lakes - Lake Ontario Watershed Protection Alliance, and the Finger Lakes Institute, Geneva, NY*

## SERVICES

- Referee for: *Water Resources Research; Journal of Hydrometeorology; Journal of Hydrology; Journal of Geophysical Research: Atmospheres; Hydrology and Earth System Sciences; Hydrological Processes; Hydrogeology Journal; AGU Books; Earth System Dynamics; Water Science and Technology; International Journal of Climatology; Remote Sensing; Estuarine, Coastal and Shelf Science; WIREs Water, etc.*
- Served as review panelist for 2014 US EPA National Priorities Grant and 2022 NOAA's NWS Office of Science and Technology Integration: Unified Forecast System Grant
- Editorial board member of [Advances in Climate Change Research](#) (2018 – present)
- Editorial board member of [JAWRA](#) (2024 – present)
- AGU 2020 session organizer

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## HONORS AND AWARDS

2018 PNNL Exceptional Contribution Program (ECP) Award



2017	EBSA Best Award, Pacific Northwest National Laboratory
2011	AEES Conference Travel Grant
2007-2010	Tuition Scholarship Award, SUNY ESF, NY
2004	First Place in the 5 <sup>th</sup> "Challenge Cup" of the College Student Research Competition of Gansu Province, China
2002	Tuition Scholarship Award, Lanzhou University, China

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