Guoqiang Tang

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WORK EXPERIENCE

Project Scientist I Climate & Global Dynamics, National Center for Atmospheric Research	2022.2 – present
Postdoctoral fellow Climate & Global Dynamics, National Center for Atmospheric Research	2022.10 – 2022.2
Postdoctoral fellow Center for Hydrology, University of Saskatchewan	2019.9 – 2022.10

EDUCATION

Ph.D. in Hydrology Department of Hydraulic Engineering, Tsinghua University, China	2014 – 2019
Visiting Graduate Scholar Joint Institute for Regional Earth System Science and Engineering, University of California, Los Angeles	2017 – 2018
B.S. Department of Hydraulic Engineering, Tsinghua University, China	2010 – 2014

SERVICE

Associate Editor: Journal of Hydrology

Associate Editor: Frontier in Water

Editorial team: Frontiers in Earth Science

Guest Editor: Special Issue "Remote Sensing Applications for Water Scarcity Assessment" on *Remote Sensing*

Convener/chair:

AGU session in 2022: “Advancing Hydrological Modeling and Prediction Using Large-Domain Meteorological and Hydrological Data Sets and Models”

AGU session in 2022: “Advances in Machine Learning for Earth Science: Observation, Modeling, and Applications”

AGU Session in 2020: “Advances in Remote Sensing of Precipitation: From Observation to Application”

RESEARCH AREA AND INTEREST

Hydrologic and land surface modeling

Uncertainty analysis and parameter optimization

Development of multi-source meteorological datasets

Satellite precipitation

Artificial intelligence in Earth science

Extreme events and climate change

PUBLICATIONS

Peer-reviewed papers

2023

[69] Wang, T., Li, Z., Ma, Z., Gao, Z. and **Tang, G.***, 2023. Diverging identifications of extreme precipitation events from satellite observations and reanalysis products: A global perspective based on an object-tracking method. Remote Sensing of Environment, 288, p.113490.

2022

[68] **Tang, G.***, Clark, M. P., & Papalexiou, S. M. (2022). EM-Earth: The Ensemble Meteorological Dataset for Planet Earth. Bulletin of the American Meteorological Society, 103(4), E996-E1018.

[67] Knoben, W.J.M., Clark, M.P., Bales, J., Bennett, A., Gharari, S., Marsh, C.B., Nijssen, B., Pietroniro, A., Spiteri, R.J., **Tang, G.** and Tarboton, D.G., 2022. Community Workflows to Advance Reproducibility in Hydrologic Modeling: Separating Model‐Agnostic and Model‐Specific Configuration Steps in Applications of Large‐Domain Hydrologic Models. Water Resources Research, 58(11), p.e2021WR031753.

[66] Sun, H., Yao, T., Su, F., He, Z., **Tang, G.**, Li, N., ... & Chen, D. (2022). Corrected ERA5 precipitation by machine learning significantly improved flow simulations for the Third Pole basins. Journal of Hydrometeorology, 23(10), 1663-1679.

[65] Sui, X., Li, Z., **Tang, G.**, Yang, Z. L., & Niyogi, D. (2022). Disentangling error structures of precipitation datasets using decision trees. Remote Sensing of Environment, 280, 113185.

[64] Hobbi, S., Papalexiou, S. M., Rajulapati, C. R., Nerantzaki, S. D., Markonis, Y., **Tang, G.**, & Clark, M. P. (2022). Detailed investigation of discrepancies in Köppen-Geiger climate classification using seven global gridded products. Journal of Hydrology, 612, 128121.

[63] Liu, B., Wan, W., **Tang, G.**, Li, H., Guo, Z., Chen, X., & Hong, Y. (2022). Statistical Analysis of CyGNSS Speckle and Its Applications to Surface Water Mapping. IEEE Transactions on Geoscience and Remote Sensing, 60, 1-15.

[62] Xiong, W., **Tang, G.***, Wang, T., Ma, Z., & Wan, W. (2022). Evaluation of IMERG and ERA5 Precipitation-Phase Partitioning on the Global Scale. Water, 14(7), 1122.

[61] Xiong, W., **Tang, G.**, & Shen, Y. (2022). Cross-Evaluation of Soil Moisture Based on the Triple Collocation Method and a Preliminary Application of Quality Control for Station Observations in China. Water, 14(7), 1054.

[60] Li, Z., **Tang, G.**, Kirstetter, P., Gao, S., Li, J. L., Wen, Y., & Hong, Y. (2022). Evaluation of GPM IMERG and its constellations in extreme events over the conterminous united states. Journal of Hydrology, 606, 127357.

[59] Zhang, D., Yang, M., Ma, M., **Tang, G.***, Wang, T., Zhao, X., ... & Wang, W. (2022). Can GPM IMERG Capture Extreme Precipitation in North China Plain?. Remote Sensing, 14(4), 928.

[58] Lu, X., Chen, Y.*, **Tang, G.***, Wang, X., Liu, Y., & Wei, M. (2022). Quantitative estimation of hourly precipitation in the Tianshan Mountains based on area-to-point kriging downscaling and satellite-gauge data merging. Journal of Mountain Science, 19(1), 58-72.

2021

[57] Liu, B., Wan, W., Guo, Z., Ji, R., Wang, T., **Tang, G.**, ... & Hong, Y. (2021). First Assessment of CyGNSS-Incorporated SMAP Sea Surface Salinity Retrieval Over Pan-Tropical Ocean. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 14, 12163-12173.

[56] Sun, H., Su, F., Yao, T., He, Z., **Tang, G.**, Huang, J., ... & Chen, D. (2021). General overestimation of ERA5 precipitation in flow simulations for High Mountain Asia basins. Environmental Research Communications, 3(12), 121003.

[55] Wang, C., **Tang, G.***, Xiong, W., Ma, Z., Zhu, S. Infrared Precipitation Estimation using Convolutional neural network for FengYun satellites. (2021) *Journal of Hydrology*. 603, 127113.

[54] **Tang, G.***, Clark, M. P., Papalexiou, S. M., Newman, A. J., Wood, A. W., Brunet, D., & Whitfield, P. H. (2021). EMDNA: an Ensemble Meteorological Dataset for North America. *Earth System Science Data*, 13(7), 3337-3362.

[53] **Tang, G.***, Clark, M. P., & Papalexiou, S. M. (2021). SC-Earth: A Station-Based Serially Complete Earth Dataset from 1950 to 2019. *Journal of Climate*, 34(16), 6493-6511.

[52] **Tang, G.*,** Clark, M. P., & Papalexiou, S. M. (2021). The Use of Serially Complete Station Data to Improve the Temporal Continuity of Gridded Precipitation and Temperature Estimates. *Journal of Hydrometeorology*, 22(6), 1553-1568.

[51] Wang, C., **Tang, G.***, & Gentine, P. PrecipGAN: Merging Microwave and Infrared Data for Satellite Precipitation Estimation using Generative Adversarial Network. *Geophysical Research Letters*, 2021, e2020GL092032.

[50] Lu, X., **Tang, G.***, Liu, X., Wang, X., Liu, Y., & Wei, M. (2021). The potential and uncertainty of triple collocation in assessing satellite precipitation products in Central Asia. *Atmospheric Research*, 252, 105452.

[49] Li, Z., **Tang, G.**, Hong, Z., Chen, M., Gao, S., Kirstetter, P., ... & Hong, Y. (2021). Two-decades of GPM IMERG early and final run products intercomparison: Similarity and difference in climatology, rates, and extremes. *Journal of Hydrology*, 594, 125975.

[48] Hong, Z., Han, Z., Li, X., Long, D., **Tang, G.**, & Wang, J. (2021). Generation of an Improved Precipitation Dataset from Multisource Information over the Tibetan Plateau. Journal of Hydrometeorology, 22(5), 1275-1295.

[47] Clark, M. P., Vogel, R. M., Lamontagne, J. R., Mizukami, N., Knoben, W. J., **Tang, G.**, ... & Papalexiou, S. The abuse of popular performance metrics in hydrologic modeling. Water Resources Research, e2020WR029001.

[46] Zhu, S., Ma, Z., Xu, J., He, K., Liu, H., Ji, Q., **Tang G.,** Hu Hao., Gao, H. (2021). A Morphology-Based Adaptively Spatio-Temporal Merging Algorithm for Optimally Combining Multisource Gridded Precipitation Products With Various Resolutions. *IEEE Transactions on Geoscience and Remote Sensing*.

[45] Feng, K., Hong, Y., Tian, J., Luo, X., **Tang, G.**, & Kan, G. (2020). Evaluating applicability of multi-source precipitation datasets for runoff simulation of small watersheds: a case study in the United States. *European Journal of Remote Sensing*, 1-11.

2020

[44] **Tang, G.***, Clark, M. P., Newman, A. J., Wood, A. W., Papalexiou, S. M., Vionnet, V., & Whitfield, P. H. (2020). SCDNA: a serially complete precipitation and temperature dataset for North America from 1979 to 2018. *Earth System Science Data*. 12(4), 2381-2409.

[43] **Tang, G.***, Clark, M. P., Papalexiou, S. M., Ma, Z., & Hong, Y. (2020). Have satellite precipitation products improved over last two decades? A comprehensive comparison of GPM IMERG with nine satellite and reanalysis datasets. *Remote Sensing of Environment*, 240, 111697.

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[41] Wang, T., & **Tang, G.*** (2020). Spatial Variability and Linkage Between Extreme Convections and Extreme Precipitation Revealed by 22‐Year Space‐Borne Precipitation Radar Data. *Geophysical Research Letters*, 47(12), e2020GL088437.

[40] Lyu, F., **Tang, G.***, Behrangi, A., Wang, T., Tan, X., Ma, Z., & Xiong, W. (2020). Precipitation Merging Based on the Triple Collocation Method Across Mainland China. *IEEE Transactions on Geoscience and Remote Sensing.*

[39] Wang, C., Xu, J., **Tang, G.***, Yang, Y., & Hong, Y. (2020). Infrared Precipitation Estimation Using Convolutional Neural Network. *IEEE Transactions on Geoscience and Remote Sensing*.

[38] Lu, X., **Tang, G.***, Wang, X., Liu, Y., Wei, M., & Zhang, Y. (2020). The Development of a Two-Step Merging and Downscaling Method for Satellite Precipitation Products. *Remote Sensing*, 12(3), 398.

[37] Ma, Z., Xu, J., Zhu, S., Yang, J., **Tang, G.**, Yang, Y., ... & Hong, Y. (2020). AIMERG: a new Asian precipitation dataset (0.1°/half-hourly, 2000–2015) by calibrating the GPM-era IMERG at a daily scale using APHRODITE. *Earth System Science Data*, 12(3), 1525-1544.

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Changes and Their Teleconnections With ENSO Over the Last 55 Years, 1961–2015, in Floods‐Dominated Basin, Jiangxi Province, China. *Earth and Space Science*, 7(3), e2019EA001047.

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[34] Li, Z., Chen, M., Gao, S., Hong, Z., **Tang, G.**, Wen, Y., ... & Hong, Y. (2020). Cross-Examination of Similarity, Difference and Deficiency of Gauge, Radar and Satellite Precipitation Measuring Uncertainties for Extreme Events Using Conventional Metrics and Multiplicative Triple Collocation. *Remote Sensing*, 12(8), 1258.

[33] Rajulapati, C. R., Papalexiou, S. M., Clark, M. P., Razavi, S., **Tang, G.**, & Pomeroy, J. W. (2020). Assessment of extremes in global precipitation products: How reliable are they? *Journal of Hydrometeorology*, 21(12), 2855-2873.

[32] Ma, M., Wang, H., Yang, Y., Zhao, G., **Tang, G.**, Hong, Z., ... & Hong, Y. (2020). Development of a new rainfall‐triggering index of flash flood warning‐case study in Yunnan province, China. *Journal of Flood Risk Management*, e12676.

[31] Sun, A. Y., & **Tang, G**. (2020). Downscaling Satellite and Reanalysis Precipitation Products Using Attention-Based Deep Convolutional Neural Nets. *Front. Water* 2: 536743. doi: 10.3389/frwa.

2019

[30] Xu, J., Ma, Z., **Tang, G.**, Ji, Q., Min, X., Wan, W., & Shi, Z. (2019). Quantitative evaluations and error source analysis of Fengyun-2-based and GPM-based precipitation products over mainland China in summer, 2018. *Remote Sensing*, 11(24), 2992.

[29] Lu, X., **Tang, G.***, Wang, X., Liu, Y., Jia, L., Xie, G., ... & Zhang, Y. (2019). Correcting GPM IMERG precipitation data over the Tianshan Mountains in China. *Journal of Hydrology*, 575, 1239-1252.

2018

[28] **Tang, G.**, Long, D., Hong, Y., Gao, J., and Wan, W. (2018), Documentation of multifactorial relationships between precipitation and topography of the Tibetan Plateau using spaceborne precipitation radars, *Remote Sensing of Environment*, *208*, 82-96.

[27] **Tang, G.,** Behrangi, A., Long, D., Li, C., Hong, Y. (2018), Exploring deep neural networks to retrieve rain and snow in high latitudes using multi-sensor and reanalysis data. *Water Resources Research*, 2018, 54(10): 8253-8278.

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[25] **Tang, G.**, Behrangi, A., Long, D., Li, C., and Hong, Y. (2018), Accounting for spatiotemporal errors of gauges: A critical step to evaluate gridded precipitation products, *Journal of Hydrology*, *559*, 294-306.

[24] Wang, C., **Tang, G.,** Han, Z., Guo, X. and Hong, Y., (2018), Global Intercomparison and Regional Evaluation of GPM IMERG Version-03, Version-04 and its latest Version-05 Precipitation Products: Similarity, Difference and Improvements, *Journal of Hydrology*.

564, 342-356.

[23] Chen, C., Chen, Q., Duan, Z., Zhang, J., Mo, K., Li, Z., and **Tang, G.** (2018), Multiscale Comparative Evaluation of the GPM IMERG v5 and TRMM 3B42 v7 Precipitation Products from 2015 to 2017 over a Climate Transition Area of China, *Remote Sensing*, *10*(6), 944.

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[20] Lu, X., Wei, M.*, **Tang, G.***, and Zhang, Y. (2018), Evaluation and correction of the TRMM 3B43V7 and GPM 3IMERGM satellite precipitation products by use of ground-based data over Xinjiang, China, *Environmental Earth Sciences*, *77*(5).

[19] Ma, Y., Hong, Y., Chen, Y., Yang, Y., **Tang, G.**, Yao, Y., Long, D., Li, C., Han, Z., and Liu, R. (2018), Performance of Optimally Merged Multisatellite Precipitation Products Using the Dynamic Bayesian Model Averaging Scheme Over the Tibetan Plateau, *Journal of Geophysical Research: Atmospheres*, *123*(2), 814-834.

[18] Ma, Y., Yang, Y., Han, Z., **Tang, G.**, Maguire, L., Chu, Z., and Hong, Y. (2018), Comprehensive evaluation of Ensemble Multi-Satellite Precipitation Dataset using the Dynamic Bayesian Model Averaging scheme over the Tibetan plateau, *Journal of Hydrology*, *556*, 634-644.

[17] Gao, J., **Tang, G.**, and Hong, Y. (2017), Similarities and Improvements of GPM Dual-Frequency Precipitation Radar (DPR) upon TRMM Precipitation Radar (PR) in Global Precipitation Rate Estimation, Type Classification and Vertical Profiling, *Remote Sensing*, *9*(11), 1142.

2017

[16] **Tang, G.**, Wen, Y., Gao, J., Long, D., Ma, Y., Wan, W., and Hong, Y. (2017), Similarities and differences between three coexisting spaceborne radars in global rainfall and snowfall estimation, *Water Resources Research*, *53*(5), 3835-3853.

[15] **Tang, G.**, Zeng, Z., Ma, M., Liu, R., Wen, Y., and Hong, Y. (2017), Can Near-Real-Time Satellite Precipitation Products Capture Rainstorms and Guide Flood Warning for the 2016 Summer in South China?, *IEEE Geoscience and Remote Sensing Letters*, *14*(8), 1208-1212.

[14] Kan, G., **Tang, G**., Yang, Y., Hong, Y., et al. (2017), An Improved Coupled Routing and Excess Storage (CREST) Distributed Hydrological Model and Its Verification in Ganjiang River Basin, China. *Water*, 9.

[13] Li, N., **Tang, G.**, Zhao, P., Hong, Y., Gou, Y., and Yang, K. (2017), Statistical assessment and hydrological utility of the latest multi-satellite precipitation analysis IMERG in Ganjiang River basin, *Atmospheric Research*, *183*, 212-223.

[12] Yang, Y., **Tang, G.**, Lei, X., Hong, Y., and Yang, N. (2017), Can Satellite Precipitation Products Estimate Probable Maximum Precipitation: A Comparative Investigation with Gauge Data in the Dadu River Basin, *Remote Sensing*, *10*(1), 41.

[11] Zeng, Z., **Tang, G.***, Hong, Y.*, Zeng, C., and Yang, Y. (2017), Development of an NRCS curve number global dataset using the latest geospatial remote sensing data for worldwide hydrologic applications, *Remote Sensing Letters*, *8*(6), 528-536.

[10] Gao, Z., Long, D., **Tang, G.**, Zeng, C., Huang, J., and Hong, Y. (2017), Assessing the potential of satellite-based precipitation estimates for flood frequency analysis in ungauged or poorly gauged tributaries of China's Yangtze River basin, *Journal of Hydrology*, *550*, 478-496.

[9] Zhong, L., Yang, R., Chen, L., Wen, Y., Li, R., **Tang, G.**, and Hong, Y. (2017), Combined Space and Ground Radars for Improving Quantitative Precipitation Estimations in the Eastern Downstream Region of the Tibetan Plateau. Part I: Variability in the Vertical Structure of Precipitation in ChuanYu Analyzed from Long-Term Spaceborne Observations by TRMM PR, *Journal of Applied Meteorology and Climatology*, *56*(8), 2259-2274.

2016

[8] **Tang, G.**, Long, D., and Hong, Y. (2016), Systematic Anomalies Over Inland Water Bodies of High Mountain Asia in TRMM Precipitation Estimates: No Longer a Problem for the GPM Era?, *IEEE Geoscience and Remote Sensing Letters*, *13*(12), 1762-1766.

[7] **Tang, G.**, Ma, Y., Long, D., Zhong, L., and Hong, Y. (2016), Evaluation of GPM Day-1 IMERG and TMPA Version-7 legacy products over Mainland China at multiple spatiotemporal scales, *Journal of Hydrology*, *533*, 152-167.

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[5] Ma, Y., **Tang, G.**, Long, D., Yong, B., Zhong, L., Wan, W., and Hong, Y. (2016), Similarity and Error Intercomparison of the GPM and Its Predecessor-TRMM Multisatellite Precipitation Analysis Using the Best Available Hourly Gauge Network over the Tibetan Plateau, *Remote Sensing*, *8*(7), 569.

[4] Zeng, Z., **Tang, G.**, Long, D., Zeng, C., Ma, M., Hong, Y., Xu, H., and Xu, J. (2016), A cascading flash flood guidance system: development and application in Yunnan Province, China, *Natural Hazards*, *84*(3), 2071-2093.

Before 2016

[3] Zhang, Y., Hong, Y., Wang, X., Gourley, J. J., Xue, X., Saharia, M., Ni, G., Wang, G., Huang, Y., Chen, S., and **Tang, G.** (2015), Hydrometeorological Analysis and Remote Sensing of Extremes: Was the July 2012 Beijing Flood Event Detectable and Predictable by Global Satellite Observing and Global Weather Modeling Systems?, *Journal of Hydrometeorology*, *16*(1), 381-395.

[2] Chen, S., Liu, H., You, Y., Mullens, E., Hu, J., Yuan, Y., Huang, M., He, L., Luo, Y., Zeng, X., **Tang, G.**, and Hong, Y. (2014), Evaluation of high-resolution precipitation estimates from satellites during July 2012 Beijing flood event using dense rain gauge observations, *PLoS One*, *9*(4), e89681.

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(2014), A cloud-based global flood disaster community cyber-infrastructure: Development and demonstration, *Environmental Modelling & Software*, *58*, 86-94.

Chinese papers

[7] **Tang G.,** Hong Y. (2018), The intercomparison and application of space-borne precipitation radars. Water Resources and Hydropower Engineering, 8: 10-18. (in Chinese)

[6] Li C., **Tang G.**, Hong Y. (2018), Evaluation of multi-source precipitation products based on the Triple-collocation method. Water Resources and Hydropower Engineering, 8: 19-28. (in Chinese)

[5] Zhong L., Chen L., Yang R., **Tang G.**, Li R., Zhou Q (2018). Variability in the vertical structure of precipitation in Sichuan and Chongqing based on 2004-2014 space-borne observations. Acta Meteorologica Sinica, 76(2): 213-227. (in Chinese)

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[3] **Tang G.**, Li Z, Xue X, et al. (2015), A study of substitutability of TRMM remote sensing precipitation for gauge-based observation in Ganjiang River basin [J]. Advances in Water Science, 26(3): 340-346. (in Chinese)

[2] **Tang G.**, Long D, Wan W, et al. An overview and outlook of global water remote sensing technology and applications [J]. SCIENCE CHINA Technologica. 2015, 10: 002. (in Chinese)

[1] **Tang G.**, Wan W, Zeng Z, et al. (2015), An overview of global precipitation measurement mission (GPM) Mission and its latest development [J]. Remote sensing technology and application, 30(4): 607-615. (in Chinese)

Book chapters

[5] **Tang, G.,** Wang, T., Ma, M., Xiong, W., Lyu, F., & Ma, Z. (2022). Progress in Satellite Precipitation Products over the Past Two Decades: Evaluation and Application in Flash Flood Warning. Remote Sensing of Water‐Related Hazards, 11-30.

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[3] Hong, Y., **Tang, G.**, Xie H., et al. (2017), Remote Sensing Water Cycle and Hydraulic Big Data: Overview, Challenge, and Opportunities, in Water science and engineering frontier, edited by Zhang C., and Wang G.

[2] **Tang, G.**, Wen, Y., Zheng, Y., Long, D., and Yang, H. (2016), From Tropical to Global Precipitation Measurement Initial Validation and Application, in Hydrologic Remote Sensing: Capacity Building for Sustainability and Resilience, edited by Y. Hong, Y. Zhang and S. I. Khan, CRC Press.

[1] Wan, Z., Hong, Y., Khan, S. I., Gourley, J. J., Flamig, Z. K., D., and **Tang, G.** (2016), Cloud-Based Cyber-Infrastructure for Disaster Monitoring and Mitigation, in Hydrologic Remote Sensing: Capacity Building for Sustainability and Resilience, edited by Y. Hong, Y. Zhang and S. I. Khan, CRC Press.

Presentations

- **Tang, G.**, Clark, M. P., Knoben, W., Liu, H., Gharari, S., Arnal, L., ... & Papalexiou, S. M. (2022, December). The impact of meteorological forcing uncertainty on hydrological modeling in representative cryosphere basins on the global scale. AGU Fall Meeting, 2022, Chicago, (Oral)
- Clark, M.P., Knoben, W., **Tang, G.**, Van Beusekom, A., Gharari, S., Arnal, L. and Spiteri, R. Advancing capabilities of terrestrial system models. AGU Fall Meeting, 2022, Chicago, (Oral)
- Sui, X., Li, Z., **Tang, G.**, Yang, Z. L., & Niyogi, D. Evaluating and intercomparing satellite and reanalysis precipitation products by using decision trees. AGU Fall Meeting 2022, Chicago, (Oral)
- Liu, H., Clark, M.P., **Tang, G.**, Knoben, W., Gharari, S., Freer, J.E., Arnal, L. and Casson, D., 2022, December. A New Spin on Global Sensitivity Analysis: Sensitivity Analysis of the SUMMA Model on the Global Scale. AGU Fall Meeting, 2022, Chicago, (Oral)
- **Tang, G.** The impact of meteorological forcing uncertainty on hydrological modeling in cryosphere basins globally. CYWater, Online, 2022, (Oral)
- **Tang, G.**, Clark, M., Papalexiou, S. M., Knoben, W., Liu, H., Gharari, S., ... & Freer, J. Characterizing global hydrological modeling uncertainties using the Ensemble Meteorological Dataset for Planet Earth (EM-Earth), Frontiers in Hydrology Meeting, 2022, San Juan, Puerto Ric, (Oral)
- **Tang, G.**, Clark, M., Papalexiou, S. M., Knoben, W., Liu, H., Gharari, S., ... & Freer, J. Characterizing global hydrological modeling uncertainties using the Ensemble Meteorological Dataset for Planet Earth (EM-Earth), CWRA National Conference, 2022, Canmore, Canada (Oral)
- Sui, X., Li, Z., **Tang, G.**, Yang, Z. L., & Niyogi, D. A novel approach to systematically analyze the error structure of precipitation datasets using decision trees, EGU General Assembly Conference, Vienna, 2022 (Poster)
- Casson, D., Knoben, W., Arnal, L., Gharari, S., van Osnabrugge, B., **Tang, G.**, Liu, H., and Clark, M.: Ensemble Data Assimilation Methods for Improved Snow Estimation and Streamflow Prediction in Mountainous Terrain, IAHS-AISH Scientific Assembly 2022, Montpellier, France, 2022
- **Tang, G.**, Clark, M., Papalexiou, S. M., Knoben, W., Liu, H., Gharari, S., ... & Freer, J. Characterizing global hydrological modeling uncertainties using the Ensemble Meteorological Dataset for Planet Earth (EM-Earth). AGU Fall Meeting, New Orleans, 2021, (Poster)
- **Tang, G.**, Clark, M. P., Papalexiou, S. M., Newman, A. J., Wood, A. W., Vionnet, V., & Whitfield, P. H. EMDNA: Ensemble Meteorological Dataset for North America. AMS Annual Meeting, 2021, Online, (Poster)
- Nerantzaki, S., Papalexiou, S. M., Rajulapati, C., **Tang, G.**, & Clark, M.. Temperature

Extremes Under Global Warming Using the SC-Earth Dataset. AGU Fall Meeting, New Orleans, 2021, (Oral)

- Clark, M., Arnal, L., Bennett, A., Casson, D., Gharari, S., Hay, J., ... & Zolfaghari, R. Advancing the science and practice of community hydrologic modeling: Development of open-source models, methods, and datasets to enable process-based hydrologic prediction across North America (and beyond). AGU Fall Meeting, New Orleans, 2021, (Oral)
- Hobbi, S., Papalexiou, S. M., Rupa, C., **Tang, G.**, Clark, M., & Markonis, I. Discrepancies in Koppen-Geiger Climate Classification Using Ten Global Gridded Products. AGU Fall Meeting, New Orleans, 2021, (Oral)
- Liu, H., Clark, M., Freer, J., **Tang, G.**, Knoben, W., Arnal, L., ... & Gharari, S. A new spin on global sensitivity analysis: worldwide sensitivity analysis of the SUMMA model. AGU Fall Meeting, New Orleans, 2021, (Poster)
- Sui, X., Li, Z., **Tang, G.**, Yang, Z. L., & Niyogi, D. A novel approach to systematically evaluate precipitation datasets using decision trees. AGU Fall Meeting, New Orleans, 2021, (Poster)
- Rupa Rajulapati, C., Papalexiou, S. M., Clark, M. P., Razavi, S., **Tang, G.**, & Pomeroy, J. Reliability of global gridded precipitation products in assessing extremes. EGU General Assembly Conference, Vienna, 2021 (Poster)
- **Tang, G.**, Clark, M. P., Papalexiou, S. M., Newman, A. J., Wood, A. W., Vionnet, V., & Whitfield, P. H. EMDNA: Ensemble Meteorological Dataset for North America. AGU Fall Meeting, 2020, Online, (Oral)
- **Tang, G.**, Clark, M. P., Papalexiou, S. M., Newman, A. J., Wood, A. W., Vionnet, V., & Whitfield, P. H. EMDNA: Ensemble Meteorological Dataset for North America. CYWater, 2020, Online, (Oral)
- **Tang, G.**, Clark, M. P., Papalexiou, S. M., Newman, A. J., Wood, A. W., Vionnet, V., & Whitfield, P. H. A serially complete precipitation and temperature dataset in North America from 1979 to 2018. Ottawa, Canada, 2020 (Oral)
- Wang, T., & **Tang, G.** Spatial Variability and Linkage Between Extreme Convections and Extreme Precipitation. AGU Fall Meeting Abstracts, Online, 2020 (Oral)
- Li, Z., Hong, Z., **Tang, G.**, Kirstetter, P. E., & Hong, Y. Ground Validations of GPM IMERG in Extreme Events over the Conterminous United States. AGU Fall Meeting Abstracts, Online, 2020 (Poster)
- Clark, M. P., Arnal, L., Gharari, S., Knoben, W., Mizukami, N., **Tang, G.**, ... & Pomeroy, J. W. Probabilistic simulations and predictions of hydrological processes over North America. AGU Fall Meeting Abstracts, Online, 2020 (Oral)
- Wang, T., **Tang, G.**, & Hong, Y. Relationship between Strong Convections and Heavy Rainfall Event based on TRMM PR and GPM DPR observations. AGU Fall Meeting Abstracts, San Francisco, 2019 (Poster)
- **Tang, G.**, Behrangi, A., Long, D., Li, C., & Hong, Y. Accounting for spatiotemporal errors of gauges: A critical step to evaluate gridded satellite precipitation products. AGU Fall meeting, Washington, 2018 (Poster)
- **Tang, G.**, Gao, J., Long, D. Intercomparison of spaceborne precipitation radars and its applications in examining precipitation-topography relationships in the Tibetan Plateau. AGU Fall meeting, New Orleans, 2017 (Oral)

- Ma, M., Wang, H., Chen, Y., **Tang, G.**, Hong, Z., Zhang, K., & Hong, Y. Establishing a rainfall threshold for flash flood warnings based on the DFFG method in Yunnan province, China. AGU Fall meeting, New Orleans, 2017 (Poster)
- **Tang, G.**, Long, D., Hong, Y. Systematic anomalies over inland water bodies of High Mountain Asia in TRMM precipitation estimates: No longer a problem for the GPM era? AGU Fall meeting, San Francisco, 2016 (Poster)
- Zeng, Z., Tang, G., Long, D., Ma, M., & Hong, Y. (2016, April). A Cascading Storm-Flood-Landslide Guidance System: Development and Application in China. EGU General Assembly Conference, Vienna, 2016 (Poster)
- **Tang, G.**, Ma, Y., Long, D., Zhong, L., Hong, Y. First Year Evaluation of GPM Day-1 IMERG and TMPA Version-7 Legacy Products over Mainland China at Multiple Spatiotemporal Scales. AGU Fall meeting. San Francisco, 2015 (Poster)
- Ma, Y., **Tang, G.**, Long, D., Zhong, L., Shen, Y., Wan, W., & Hong, Y. First Evaluation of Day-1 IMERG products using the best-available hourly rain gauge network over the Tibetan Plateau. AGU Fall meeting. San Francisco, 2015 (Poster)

TEACHING EXPERIENCE

Guest Lecturer 2022-2023

Spring course: "Process-Based Hydrological Modelling", University of Saskatchewan, Canada

Guest Lecturer 2019

Spring course: "Global change and remote sensing of water cycle", Peking University, China

Guest Lecturer 2016-2018

Summer workshop: "Global remote sensing, hydrology, meteorology, and geology models", Tsinghua University, China

Guest Lecturer 2015

Summer course: "Prevention and Control of Agricultural Non-point Pollution - 2015 Summer School for National Graduate Students", Southwest University, China

Teaching Assistant 2015

Spring course: "Modern Remote Sensing Hydrology", Tsinghua University, China

AWARD

Excellent graduate of Beijing	2019
Excellent doctoral dissertation of Tsinghua University	2019
Excellent doctoral graduate of Tsinghua University	2019
First prize in the research paper competition for graduate students held by Nanjing Hydraulic Research Institute	2019

December 9th scholarships (10 winners every year in Tsinghua University)	2018
China National Scholarship for Graduate Students	2018
China National Scholarship for Graduate Students	2017
China National Scholarship for Graduate Students	2016
China National Scholarship for Graduate Students	2015
Gold Award in Hazard, Risk and Safety: 2016 Graduate Academic Forum, jointly held by Department of Hydraulic Engineering, Tsinghua University and Academy of Disaster Reduction and Emergency Management, Beijing Normal University	2016
Key Ph.D. training program in Department of Hydraulic Engineering, Tsinghua University	2016-2019
Excellent Graduate of Tsinghua University	2014