

HYUNGJUN KIM /hjaŋ-dʒun kim/

Global Hydrologist

Specialty Appointed Associate Professor
Institute of Industrial Science & Dept. of Civil Engineering
The University of Tokyo

Be607, 4-6-1 Komaba, Meguro-ku, Tokyo 153-8505, JAPAN
+81-3-5452-6382
hjkim@iis.u-tokyo.ac.jp

PROFESSIONAL PREPARATION:

2010 PhD in Civil Engineering, *The University of Tokyo, Tokyo, Japan*
2004 MS in Atmospheric Sciences, *Yonsei University, Seoul, Korea*
2001 BS in Atmospheric Sciences, *Yonsei University, Seoul, Korea*

APPOINTMENTS:

2017.07 – Present **Assoc. Project Scientist** (2019.07 –), **Assoc. Visiting Scholar** (2017.07 – 2019.06)
UCLA Joint Institute for Regional Earth System Science and Engineering, Los Angeles, USA
NASA Jet Propulsion Laboratory, Pasadena, CA, USA
2012.04 – Present **S. A. Associate Professor** (2017.04 –), **Assistant Professor** (2012.04 – 2017.03),
Institute of Industrial Science, The University of Tokyo, Tokyo, Japan
Dept. of Civil Engineering, The University of Tokyo, Tokyo, Japan
2010.10 – 2012.03 **Postdoctoral Scholar**, *UC Center for Hydrologic Modeling, University of California, Irvine, Irvine, CA, USA*
2011.01 – 2012.03 **Research Fellow**, *Institute of Industrial Science, The University of Tokyo, Tokyo, Japan*
2010.07 – 2010.09 **Researcher**, *Tokyo Institute of Technology, Tokyo, Japan*
2010.04 – 2010.06 **Project Researcher**, *Institute of Industrial Science, The University of Tokyo, Tokyo, Japan*

RESEARCH TOPICS:**Coupled Natural-Human Systems and Sustainable Development**

Investigating anthropogenic alteration on natural processes and the feedback to human society. Developing numerical schemes representing human activities in various sectors (e.g., water, agriculture and energy) for global physical models and assessing their impacts. Investigating renewable energy development (e.g., photovoltaics) and the impact on regional and global climate. Incorporating societal and economic approaches into a numerical modeling framework to provide quantitative guides and evidences for international initiatives such as UN Sustainable Development Goals.

Energy and Water Cycles, Climate Forcing and Land Feedback, and Extreme Events

Developing numerical schemes (e.g., flood inundation) and modeling framework for global scale hydrological simulations including development of a long-term (> 100-year) surface meteorology dataset. Quantifying energy-water balances and land-atmosphere interactions under climate changes. Investigating climate variabilities (e.g., El Niño) and their teleconnection patterns to regional hydrology and related disaster risks such as flood and drought. Estimating simulation uncertainty and constructing a benchmark environment.

Remote Sensing Hydrology and Big Data-Model Integration

Estimating uncertainty of radar and radiometer satellite precipitation remote sensing (e.g., TRMM and GPM) and developing a retrieval algorithm considering the physical conditions of the land and atmosphere. Detecting changes of freshwater availabilities using satellite gravimetry (e.g., GRACE). Monitoring surface water height using satellite altimetry (e.g., Jason and SWOT) and incorporating with deep-learning for short-lead (< 24-hour) river stage forecast. Developing big data (including satellite observation) I/O, analysis and assimilation framework.

PROFESSIONAL SERVICES, SYNERGISTIC ACTIVITIES & SCIENTIFIC OUTREACHES: (selected)**Global Soil Wetness Project Phase 3 (GSWP3), *Chair* (since 2014)**

One of core projects of GLASS/GEWEX as a liaison across broader science communities including ISI-MIP, LUMIP, CLIC/WCRP, GDAP/GEWEX, and CMIP6 (<http://hydro.iis.u-tokyo.ac.jp/GSWP3/>)

Land Surface, Snow and Soil-moisture Model Intercomparison Project (LS3MIP), *Co-chair* (since 2014)

A CMIP6-endorsed-MIP to provide a comprehensive assessment of land surface, snow and soil moisture feedbacks on climate variability and climate change, and to diagnose systematic biases in the land modules of current ESMs. (<http://www.climate-cryosphere.org/activities/targeted/ls3mip>)

Global Land Atmosphere System Study (GLASS), *Elected Panel Member* (since 2012)

A science panel member of Global Energy Water Exchanges Project (GEWEX), one of four core projects of World Climate Research Programme (WCRP) (<http://www.gewex.org/panels/global-landatmosphere-system-study-panel/glass-panel/>)

Today's Earth Global, *Advisory* (since 2012)

Global pseudo real-time simulation system of land surface, river discharge and flood area fraction co-developed by Japan Aerospace Exploration Agency/Earth Observation Research Center (JAXA/EORC), Remote Sensing Technology Center of Japan (RESTEC), and The University of Tokyo (<https://www.eorc.jaxa.jp/water/TE-global/>)

Precipitation Measurement Mission (PMM), *Science Team of JAXA* (since 2013), *Science Team of NASA* (2016-2019)

Japan-U.S. joint satellite mission of Global Precipitation Measurement/Dual-frequency Precipitation Radar (GPM/DPR) (<https://pmm.nasa.gov/>)

Surface Water and Ocean Topography (SWOT), *Science Team of NASA* (2016-2018)

French-U.S. joint satellite mission for global measurement of terrestrial and ocean water surface elevation (<https://swot.jpl.nasa.gov/>)

Gravity Recovery And Climate Experiment – Follow On (GRACE-FO), *Science Team of NASA* (since 2020)

Follow on mission of the GRACE, a Germany-U.S. joint satellite mission for continuing its legacy of tracking Earth's water movement across the planet (<https://gracefo.jpl.nasa.gov/>)

ExtremeX, *Participant* (since 2018)

Numerical experiments to disentangle the role of different climatological drivers for recent extreme events using multiple climate models constraining land surface states and/or atmospheric dynamics.

Soil Parameter Model Intercomparison Project (SP-MIP), *Primary Forcing Data Provider & Participant* (since 2018)

Controlled multi-model global offline experiments to investigate whether simulation spreads of water-balance variables (e.g., evapotranspiration, soil-moisture and runoff) depend on model structure or model parameters.

Half a degree Additional warming, Prognosis and Projected Impacts (HAPPI), *Collaborator* (since 2016), and for Land (HAPPI-Land), *Contributor* (since 2017)

Multi-model super-ensemble based quantifications of relative risks of extremes under 1.5/2.0°C warming following the Paris Agreement (<http://www.happimip.org/>) and an extension of HAPPI project to estimate the impact of land use and land cover changes based on different land use scenarios.

African Monsoon Multidisciplinary Analysis (AMMA) Land surface Model Intercomparison Project Phase 2 (ALMIP2), *Working Group* (since 2013)

A project of GLASS/GEWEX to obtain a better understanding of the intra-seasonal and interannual variability of the west-African monsoon (http://www.umn-cnrm.fr/amma-moana/amma_surf/almip2)

Inter-Sectoral Impact Model Intercomparison Project (ISI-MIP), *Participant* (since 2011), *Primary Forcing Data Provider for the Phase 2* (2014-2016)

Climate-impacts modelling initiative to contribute to a quantitative and cross-sectoral impact assessments of climate change (<https://www.isimip.org/>)

GEWEX Asian Monsoon Experiment (GAME)-Tibet, *Field Campaign Participant* (2002), and -Tropics, *Field Campaign Participant* (2002-2003)

Setup eddy covariance tower flux measurements for intensive observation periods and long-term measurement over Tibetan Plateau (prairie) and Thailand (mixed forest)

Organizing committee of an inter-community international symposium of Hydrology delivers Earth System Science to Society (HESSS) – 1st at Tsukuba, Japan, Feb., 2007; 2nd at Tokyo, Japan, Jun., 2010 (jointly with GSWP/GLASS, AsiaFlux/ FLUXNET, and LandFlux-Eval); 3rd at Seoul, Korea, Aug., 2013 (jointly with AsiaFlux annual meeting); 4th at Tokyo, May, 2017 (jointly with science communities across disciplines including GLASS/GEWEX, ILAMB and ISI-MIP) (<http://www.gewexevents.org/events/hesss4/>); 5th at Saskatoon, Canada, Jun., 2020 (planned), Land Modeling “LandMIP” Workshop at Zurich, Switzerland, Oct., 2015

(co-) Convener of *American Geophysical Union Fall Meeting* – Advances in large-scale modeling and remote sensing of climate-hydrology-human interactions toward sustainable land-water resource management (2018), Computational Methods and Tools for Model-Data Integration (2018), Progress in large-scale modeling and remote sensing of the water cycle toward better human water management (2017), Climate Extremes: Trends, Mechanisms, and Prediction (2015), Progress in Large-Scale Modeling and Remote Sensing of the Water Cycle in a Changing World (2015), Land Surface, Snow, and Soil moisture in Land-Climate Feedback and Model Diagnosis (2015); *Asia Oceania Geosciences Society* – At the Edge of Hydrology: Natural- and Human-induced Changes in Fluxes Across the Land-ocean and Land-atmosphere Interfaces with Impacts on Global and Regional Water Cycle (2018), Water Cycle in a Changing Climate from Observations and Model Simulations, and Implications for Water Resources (2014), Natural- and Human-Induced Changes and the Role of Groundwater in Terrestrial Water Cycle (2014), Global Change Impacts on Hydrological Cycle and Implications for Water Resources (2012); *GEWEX Science Conference* – Advances in Irrigation Hydrology and Irrigation Impact on Water Cycle: Measurements, Modeling, and Multi-Scale Impacts on Water Resources (2018)

Guest editor of a special collection of Hydrology in Earth System Science and Society (2011) – Journal of Hydrometeorology, AMS (<https://journals.ametsoc.org/topic/hesss>); Hydrology delivers Earth System Sciences Society 4 (2017) – Water Resources Research, AGU ([https://agupubs.onlinelibrary.wiley.com/doi/toc/10.1002/\(ISSN\)1944-7973.HESSS4](https://agupubs.onlinelibrary.wiley.com/doi/toc/10.1002/(ISSN)1944-7973.HESSS4)); Integrating Big Data with Earth System Models of Natural and Human Systems: Confronting Models with Observations to Constrain Emergent Behavior (2018) – Frontiers in Big Data (<https://www.frontiersin.org/research-topics/8457/integrating-big-data-with-earth-system-models-of-natural-and-human-systems-confronting-models-with-o>); Large-scale Modeling and Remote Sensing of Climate-Hydrology-Human Interactions (2019) – jointly in Atmosphere, Water and Remote Sensing, MDPI

JOURNAL PUBLICATIONS: (peer-reviewed; international)h-index: 18 & 2544 citations for 52 publications @ Researcher ID (<http://bit.ly/hk-publons>)h-index: 21 & 2826 citations for 62 publications @ Scopus (<http://bit.ly/hk-scopus>)h-index: 21 & 4095 citations @ Google Scholar (<http://bit.ly/hk-google>)*In review, discussion or revision*

Reyer, C., R. S. Gonzalez, K. Dolos, F. Hartig, Y. Hauf, M. Noack, P. Lasch-Born, T. Rötzer, H. Pretzsch, H. Mesenburg, S. Fleck, M. Wagner, A. Bolte, T. G.M. Sanders, P. Kolar, A. Mäkelä, T. Vesala, I. Mammarella, J. Pumpanen, A. Collalti, C. Trotta, G. Matteucci, E. D'Andrea, L. Foltýnová, J. Krejza, A. Ibrom, K. Pilegaard, D. Loustau, J.-M. Bonnefond, P. Berbigier, D. Picart, S. Lafont, M. Dietze, D. Cameron, M. Vieno, H. Tian, A. Palacios-Orueta, V. Cicuendez, L. Recuero, K. Wiese, M. Büchner, S. Lange, J. Volkholz, **H. Kim**, G. P. Weedon, J. Sheffield, I. V. del Valle, F. Suckow, J. A. Horemans, S. Martel, F. Bohn, J. Steinkamp, A. Chikalanov, M. Mahnken, M. Gutsch, and K. Frieler (____) The PROFOUND database for evaluating vegetation models and simulating climate impacts on forests, *ESSD*, in review

Chen, X., P. Ciais, F. Maignan, Y. Zhang, A. Bastos, C. Bacour, P. Gentile, D. Goll, L. Fan, **H. Kim**, L. Li, L. Liu, Y. Liu, S. Peng, H. Tang, N. Viovy, J.-P. Wigneron, J. Wu, W. Yuan and H. Zhang (____) Leaf phenology controls the photosynthetic seasonality across Amazonian forest: a large-scale modeling analysis, *Global Change Biology*, in review

Yin, Z., X. H. Wang, C. Otte, F. Zhou, M. Guimberteau, J. Polcher, S. S. Peng, S. L. Piao, L. Li, Y. Bo, X. L. Chen, X. D. Zhou, **H. Kim**, and P. Ciais (____) Irrigation intensifies hydrological cycle in China, *JAMES*, in review

Kim, H., G. Madakumbura, S. Wang, N. Utsumi, H. Shiogama, E. Fisher, and J.-H. Yoon (____) Increasing risk of monsoon extremes: Consecutive flood and heatwave in Japan 2018, *Bull. Amer. Meteor. Soc.*, in review after major revision

Bayu, T., **H. Kim** and T. Oki (____) Contribution of water governance to water and sanitation access equality in developing countries, *Water Resources Research*, in major revision

Gleeson, T., T. Wagener, M. Cuthbert, S. Rahman, M.F.P. Bierkens, P. Döll, R. Rosolem, S.C Zipper, E. Bresciani, A. Ducharne, R. Taylor, M. Hill, Y. Wada, M.-H. Lo, E. Luijendijk, R. Maxwell, A. Hartmann, I. de Graaf, N. Oshinlaja, C. West, J.S. Famiglietti, S. Kollet, L. Condon, B. Scanlon and **H. Kim** (____) Groundwater representation in continental to global hydrologic models: a call for open and holistic evaluation, conceptualization and classification, *Water Resource Researches*, in revision after rejection

Utsumi, N., H. Kim, H. Shiogama and T. Oki (____) Changes of weather systems and precipitation under 1.5 and 2°C warmer climates, *Water Resources Research*, in revision after rejection

Guimberteau, M., P. Ciais, C. Ottlé, D. Zhu, A. Jornet, and **H. Kim** (____) Trends of water budget components and river discharge extremes in Arctic basins, *Water Resources Research*, in revision after rejection

Yanagawa, A., S. Yoshikawa, Y. Iseri, J. Cho, **H. Kim** and S. Kanae (____) Factors controlling resistance and resilience during wet and dry climate extremes, *Nature Ecology and Evolution*, in revision after rejection

Haddad, Z., R. Atlas, G.S. Bhat, D. Bouniol, S. Brown, L. Callahan, P. Chambon, T. Fiolleau, K. Furukawa, C. Goldstein, G. Heymsfield, S. Hristova-veleva, E. Im, R. Kakar, M. C. Kalapureddy, **H. Kim**, C. Kishtawal, T. L'ecuyer, L. Li, Z. J. Luo, G. Mace, P. Mukhopadhyay, T. N Rao, D. Posselt, A. Protat, R. Roca, G. Skofronick-Jackson, R. Storer, O. Sy, P. Tabary, S. Tanelli, W.-K. Tao, F. J. Turk, S. van den Heever, D. Vane, D. Waliser, D. Wu, and G. Stephens (____) Distributed satellite microwave observation strategies for cloud and precipitation dynamics, *Terrestrial Atmospheric and Oceanic Sciences Journal*, in review

2019

63. Wang, S.-Y., **H. Kim**, D. Coumou, J.-H. Yoon, L. Zhao and R. Gillies (2019) Consecutive extreme flood and heat wave events in Japan: Are they becoming a norm?, *Atmospheric Science Letters*, doi.org/10.1002/asl.933

62. **Kim, H.** (2019) [Global Climate] River Discharge and Runoff [in "State of the Climate in 2018"], *Bull. Amer. Meteor. Soc.*, doi:10.1175/2019BAMSStateoftheClimate.1

61. Cuthbert, M. O., R. Taylor, G. Favreau, M. Todd, K. Villholth, A. MacDonald, M. Shamsudduha, B. R. Scanlon, D.O. V. Kotchoni, J.-M. Vouillamoz, F.M.A. Lawson, P.A. Adjomayi, J. Kashaigili, D. Seddon, J. Sorensen, G.Y. Ebrahim, M. Owor, P. Nyenje, Y. Nazoumou, I. Goni, B. Ousman, T. Sibanda, M. Ascott, D. Macdonald, W. Agyekum, Y. Koussoubé, H. Wanke, **H. Kim**, Y. Wada, M.-H. Lo, T. Oki and N. Kukuric (2019) Observed controls on resilience of groundwater to climate variability in Africa, *Nature*, 10.1038/s41586-019-1441-7

60. Ménard, C., R. Essery, A. Barr, P. Bartlett, J. Derry, M. Dumont, C. Fierz, **H. Kim**, A. Kontu, Y. Lejeune, D. Marks, M. Niwano, M. Raleigh, L. Wang and N. Wever (2019), Meteorological and evaluation datasets for snow modelling at ten reference sites: description of in situ and bias-corrected reanalysis data, *Earth System Science Data*, doi.org/10.5194/essd-2019-12

59. Santos, M., D. Medvigy, M. S. Dias, E. Freitas, **H. Kim** (2019), Seasonal Flooding Causes Intensification of the River Breeze in the Central Amazon, *J. Geophys. Res. Atmos.*, doi.org/10.1029/2018JD029439

58. Utsumi, N., **H. Kim**, F. J. Turk and Z. Haddad (2019) Improving satellite-based sub-hourly surface rain estimates using vertical rain profile information, *Journal of Hydrometeorology*, doi.org/10.1175/JHM-D-18-0225.1

57. Madakumbura, D. G., **H. Kim**, N. Utsumi, H. Shiogama, E. M. Fischer, Ø. Seland, J. F. Scinocca, D. M. Mitchell, Y. Hirabayashi and T. Oki (____), Event-to-event intensification of the hydrologic cycle in 1.5°C and 2°C warmer worlds, *Scientific Reports*, doi:10.1038/s41598-019-39936-2
56. Schewe, J., J. Elliott, L. Francois, S. N. Gosling, V. Huber, H. K. Lotze, C. Reyer, S. I. Seneviratne, M. T. H. van Vliet, R. Vautard, Y. Wada, F. Zhao, L. Breuer, M. Büchner, D. A. Carozza, J. Chang, P. Ciais, M. Coll, D. Deryng, A. de Wit, T. D. Eddy, C. Folberth, K. Frieler, A. Friend, D. Gerten, L. Gudmundsson, N. Hanasaki, A. Ito, N. Khabarov, **H. Kim**, P. Lawrence, C. Morfopoulos, C. Müller, H. M. Schmied, R. Orth, S. Ostberg, Y. Pokhrel, T. A. M. Pugh, G. Sakurai, Y. Satoh, E. Schmid, T. Stacke, J. Steenbeek, J. Steinkamp, Q. Tang, H. Tian, D. Tittensor, J. Volkholz, X. Wang, L. Warszawski (2019) State-of-the-art global models underestimate impacts from climate extremes, *Nature Communications*, doi:10.1038/s41467-019-08745-6
55. Rashid, M., R.-Y. Chien, A. Ducharne, **H. Kim**, P. J.-F. Yeh, C. Peugeot, A. Boone, X. He, L. Séguis, Y. Yabu, M. Boukari, M.-H. Lo (2019) Evaluation of groundwater simulations in Benin from the ALMIP2 project, *Journal of Hydrometeorology*, doi.org/10.1175/JHM-D-18-0025.1
54. Tokuda, D., **H. Kim**, D. Yamazaki, and T. Oki (2019) Development of a global river water temperature model considering fluvial dynamics and seasonal freeze-thaw cycle, *Water Resources Research*, doi:10.1029/2018WR023083
53. Koirala, S., **H. Kim**, Y. Hirabayashi, S. Kanae, and T. Oki (2019) Sensitivity of global hydrological simulations to groundwater capillary flux parameterizations. *Water Resources Research*, doi:10.1029/2018WR023434

2018

52. Krinner, G., C. Derksen, R. Essery, M. Flanner, S. Hagemann, M. Clark, A. Hall, H. Rott, C. Brutel-Vuilmet, **H. Kim**, C. Ménard, L. Mudryk, C. Thackeray, L. Wang, G. Arduini, G. Balsamo, P. Bartlett, J. Boike, A. Boone, F. Chérut, J. Colin, M. Cuntz, Y. Dai, B. Decharme, J. Derry, A. Ducharne, E. Dutra, X. Fang, C. Fierz, J. Ghattas, Y. Gusev, V. Haverd, A. Kontu, M. Lafaysse, R. Law, D. Lawrence, W. Li, T. Marke, D. Marks, O. Nasonova, T. Nitta, M. Niwano, J. Pomeroy, M. S. Raleigh, G. Schaedler, V. Semenov, T. Smirnova, T. Stacke, U. Strasser, S. Svensson, D. Turkov, T. Wang, N. Wever, H. Yuan, and W. Zhou (2018) ESM-SnowMIP: Assessing models and quantifying snow-related climate feedbacks, *Geosci. Model Dev.*, doi:10.5194/gmd-11-5027-2018
51. Yin, Z., Catherine Ottle, P. Ciais, M. Guimberteau, X. Wang, D. Zhu, F. Maignan, S. Peng, S. Piao, J. Polcher, F. Zhou, and **H. Kim** (2018) Evaluation of ORCHIDEE simulated soil moisture over China and impacts of different atmospheric forcing data, *Hydrol. Earth Syst. Sci.*, doi:10.5194/hess-2017-699
50. **Kim, H.** (2018) [Global Climate] River Discharge [in "State of the Climate in 2017"], *Bull. Amer. Meteor. Soc.*, 99 (8), S33–S34, doi:10.1175/2018BAMSStateoftheClimate.1.
49. Zaherpour, J., S. N. Gosling, N. Mount, D. Gerten, H. M. Schmied, **H. Kim**, I. Haddeland, J. Schewe, J. Liu, G. Leng, L. Gudmundsson, N. Hanasaki, R. Dankers, S. Eisner, T. Oki, T. I E Veldkamp, Y. Pokhrel, Y. Wada, Y. Masaki and Y. Satoh (2018) Worldwide evaluation of mean and extreme runoff from six global-scale hydrological models that account for human-influences, *Env. Res. Let.*, 13, 065015
48. Wartenburger, R., J. Chang, P. Ciais, D. Deryng, J. Elliott, C. Folberth, S. N. Gosling, A. Henrot, T. Hickler, M. Hirschi, A. Ito, L. Junguo, N. Khabarov, **H. Kim**, G. Leng, X. Liu, Y. Masaki, C. Morfopoulos, C. Muueller, K. Nishina, R. Orth, Y. Pokhrel, T. A. M. Pugh, Y. Satoh, S. Schapho, E. Schmid, H. Muueller Schmied, T. Stacke, Q. Tang, Y. Wada, X. Wang, G. P. Weedon, H. Yang and T. Zhou (2018) Evapotranspiration simulations in ISIMIP2a - Evaluation of spatio-temporal characteristics with a comprehensive ensemble of independent datasets, *Env. Res. Let.*, 13, 075001
47. Utsumi, N. and **H. Kim** (2018) Estimation of Satellite Precipitation Retrieval Bias for Different Cloud Systems over Western North Pacific, *IEEE Geoscience and Remote Sensing Letters*, 10.1109/LGRS.2018.2815590
46. Hirsch, A. L., B. P. Guillod, S. I. Seneviratne, U. Beyerle, L. R. Boysen, V. Brovkin, E. L. Davin, J. C. Doelman, **H. Kim**, D. M. Mitchell, T. Nitta, H. Shiogama, S. Sparrow, E. Stehfest, D. P. van Vuuren, S. Wilson (2018) Biogeophysical impacts of land use change on climate extremes in low emission scenarios: Results from HAPPI-Land, *Earth's Future*, doi:10.1002/2017EF000744
45. Tangdamrongsub, N., S.-C. Han, M. Decker, I.-Y. Yeo, and **H. Kim** (2018) On the use of GRACE normal equation of intersatellite tracking data for improved estimation of soil moisture and groundwater in Australia, *Hydrol. Earth Syst. Sci.*, doi.org/10.5194/hess-22-1811-2018
44. Guimberteau, M., D. Zhu, F. Maignan, Y. Huang, C. Yue, S. Dantec-Nédélec, C. Ottlé, A. Jornet-Puig, A. Bastos, P. Laurent, D. Goll, S. Bowring, J. Chang, B. Guenet, M. Tifafi, S. Peng, G. Krinner, N. Vuichard, T. Wang, X. Wang, Y. Wang, Z. Yin, C. Qiu, E. Joetzer, **H. Kim** and P. Ciais, (2018) ORCHIDEE-MICT, a land surface model for the high-latitudes, *Geosci. Model Dev.*, doi.org/10.5194/gmd-11-121-2018

2017

43. Salem, S., M. H. Strand, H. Higa, **H. Kim**, H. Kobayashi, K. Oki, and T. Oki, (2017) Evaluation of MERIS chlorophyll-a retrieval processors in a complex turbid Lake Kasumigaura through 10-year mission, *Remote Sens.*, 9, 1022; doi:10.3390/rs9101022
42. Mateo, C. M., D. Yamazaki, **H. Kim**, A. Champathong, J. Vaze, and T. Oki, (2017) Impacts of spatial resolution and representation of flow connectivity on large-scale simulation of floods, *Hydrol. Earth Syst. Sci.*, doi:10.5194/hess-2016-620

41. Salem, S., H. Higa, **H. Kim**, H. Kobayashi, K. Oki, and T. Oki, (2017) Assessment of Chlorophyll-a Algorithms Considering Different Trophic Statuses and Optimal Bands, *Sensors*, 17(8), 1746; doi:10.3390/s17081746
 40. **Kim, H.** (2017) [Global Climate] River Discharge [in "State of the Climate in 2016"], *Bull. Amer. Meteor. Soc.*, 98 (8), S28-S30, doi:10.1175/2017BAMSStateoftheClimate.1.
 39. Maeda, E., X. Ma, F. Wanger, **H. Kim**, T. Oki, D. Eamus, and A. Huete (2017) Evapotranspiration seasonality across the Amazon basin, *Earth Syst. Dynam.*, 8, 439-454.
 38. Salem, S., H. Higa, **H. Kim**, H. Kobayashi, K. Oki, and T. Oki, (2017) Multi-algorithm indices and look-up table for chlorophyll-a retrieval in highly turbid water bodies using multispectral data, *Remote Sens.*, 9(6), 556; doi:10.3390/rs9060556
 37. Toride, K., P. Neluwala, **H. Kim**, and K. Yoshimura (2017) Feasibility Study of the Reconstruction of Historical Weather with Data Assimilation, *Monthly Weather Review.*, doi.org/10.1175/MWR-D-16-0288.1.
 36. Zhao, F., T. Veldkamp, K. Frieler, J. Schewe, S. Ostberg, S. Willner, B. Schauburger, S. Gosling, H. Müller Schmied, F. Portmann, G. Leng, M. Huang, X. Liu, Q. Tang, N. Hanasaki, H. Biemans, D. Gerten, Y. Satoh, Y. Pokhrel, T. Stacke, P. Ciais, A. Ducharne, M. Guimberteau, Y. Wada, **H. Kim**, and D. Yamazaki (2017) The critical role of the routing scheme in simulating peak river discharge in global hydrological models, *Environ. Res. Lett.*, 12, 075003.
 35. Park, K. J., K. Yoshimura, **H. Kim** and T. Oki, (2017) Chronological development of terrestrial mean precipitation, *Bull. Amer. Meteor. Soc.*, doi: 10.1175/BAMS-D-16-0005.1.
 34. Veldkamp, T., Y. Wada, J. Aerts, P. Doll, S. Gosling, J. Liu, Y. Masaki, T. Oki, S. Ostberg, Y. Pokhrel, Y. Satoh, **H. Kim**, and P. Ward (2017), Water scarcity hotspots travel downstream due to human interventions in the 20th and 21st century, *Nature Communications*, doi:10.1038/ncomms15697.
 33. Getirana, A., A. Boone, C. Peugeot, and ALMIP2 Working Group (**H. Kim** 47/58), (2017) Streamflows over a West African Basin from the ALMIP2 Model Ensemble, *Journal of Hydrometeorology*, doi:10.1175/JHM-D-16-0233.1
 32. Grippa, M., L. Kergoat, A. Boone, C. Peugeot, J. Demarty, B. Cappelaere, L. Gal, P. Hiernaux, E. Mougin, A. Ducharne, E. Dutra, M. Anderson, C. Hain, and ALMIP2 Working Group (**H. Kim** 47/58), (2017) Modeling Surface Runoff and Water Fluxes over Contrasted Soils in the Pastoral Sahel: Evaluation of the ALMIP2 Land Surface Models over the Gourma Region in Mali, *Journal of Hydrometeorology*, doi:10.1175/JHM-D-16-0170.1
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BOOK & NON PEER-REVIEWED PUBLICATIONS:

1. **Kim, H.**, J. Schewe, G. Abramowitz, M. Ek, A. Boone, S. I. Seneviratne, F. M. Hoffman, J. S. Famiglietti, T. Nakaegawa, Y. Onuma, T. Nitta, D. Yamazaki, T. Yoshikane, M. Kiguchi, K. Yoshimura, Y. Hirabayashi and T. Oki (2017) 4th HESS International Conference on Climate Extremes and Global Energy, Water and Carbon Cycles, *GEWEX News*, 27, 3.
2. Oki, T and **H. Kim** (2017) Hydrologic Cycle. The International Encyclopedia of Geography. 1–12. John Wiley & Sons, Inc., Hoboken, NJ, USA. doi: 10.1002/9781118786352.wbieg0842
3. Hoffman, F. M., C. D. Koven, G. Keppel-Aleks, D. M. Lawrence, W. J. Riley, J. T. Randerson, A. Ahlström, G. Abramowitz, D. D. Baldocchi, M. Best, B. Bond-Lamberty, M. De Kauwe, A. S. Denning, A. Desai, V. Eyring, R. Fisher, P. J. Gleckler, M. Huang, G. Hugelius, A. K. Jain, N. Y. Kiang, **H. Kim**, R. D. Koster, S. V. Kumar, H. Li, Y. Luo, J. Mao, N. G. McDowell, U. Mishra, P. Moorcroft, G. S. H. Pau, D. M. Ricciuto, K. Schaefer, C. R. Schwalm, S. Serbin, E. Shevliakova, A. G. Slater, J. Tang, M. Williams, J. Xia, C. Xu, R. Joseph, and D. Koch (2016), International Land Model Benchmarking (ILAMB) 2016 Workshop Report, DOE/SC-0186, *U.S. Department of Energy, Office of Science*, Germantown, Maryland, USA, 157 pp., doi:10.2172/1330803.
4. Oki, T and **H. Kim** (2016) Macroscale Hydrological Modeling and Global Water Balance, in *Terrestrial Water Cycle and Climate Change: Natural and Human-Induced Impacts* (eds Q. Tang and T. Oki), John Wiley & Sons, Inc., Hoboken, NJ, USA. doi: 10.1002/9781118971772.ch1
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6. Seneviratne, S. I., B. van den Hurk, D. Lawrence, G. Krinner, G. Hurrett, **H. Kim**, C. Derksen, T. Oki, A. Boone, M. Ek, V. Brovkin, P. Dirmeyer, H. Douville, P. Friedlingstein, S. Hagemann, R. Koster, N. de Noblet-Ducoudre, and A. Pitman (2015) Land Processes, Forcings, and Feedbacks in Climate Change Simulations: The CMIP6 “LandMIPs”, *GEWEX News*, 24, 4.
7. Yeh, P. J.-F. Tang Q. and **H. Kim**, (2012) Validation of Gravity Recovery and Climate Experiment Data for Assessment of Terrestrial Water Storage Variations, in *Multiscale Hydrologic Remote Sensing: Perspectives and Applications* (eds N.-B. Chang and Y. Hong), CRC Press. doi.org/10.1201/b11279-26
8. van Oevelen, P. J., **H. Kim**, T. Oki and S. Benedict (2010) HESS-2 International Conference, *GEWEX News*, 20(4), 17.
9. Oki, T., **H. Kim**, N. Hanasaki, S. Kanae, S. Seto, and P. Yeh (2009) Recent Achievements in Macroscale Hydrological Modelling, *GEWEX News*, 19(2), 12-16.

DATASETS & TOOLS:

Kim, H. (2017) Global Soil Wetness Project Phase 3 Atmospheric Boundary Conditions (Experiment 1) [Data set]. Data Integration and Analysis System (DIAS), <https://doi.org/10.20783/DIAS.501>

Kim, H. (2016) GPyM: GPM (Global Precipitation Measurement) Python Module, <https://doi.org/10.5281/zenodo.60789>

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PRESENTATIONS: (selected from invited & keynote)

Kim, H., Y. Onuma, A. L. Hirsch, M.-H. Lo, A. Ducharme, G. Krinner and S. Seneviratne, Climate Forcing and Land Feedbacks in Earth System Modeling, 10th Conference of Korean Society of Climate Change Research, Seoul, Korea, Jun. 27-28th, 2019

- Kim, H.**, Uncertainty of Global Hydrologic Simulations: Associated with physics and data, 2nd Workshop IGEM – Impact of Groundwater in Earth System Models, Taipei, Taiwan, Mar. 18-20th, 2019
- Kim, H.**, Drought: Natural Variability, Human intervention and International Research Initiatives, *Opening Ceremony of Center for Drought Long-range Prediction Research*, Gwangju, Korea, Sep. 6-7th, 2018
- Kim, H.**, GSMAp Satellite Precipitation on Google Earth Engine Platform and Application, *Google Earth Engine Mini Summit 2018 in Tokyo*, Tokyo, Japan, Mar. 15-16th, 2018
- Kim, H.**, T. Kubota, N. Utsumi, Y. Ishitsuka, K. Yoshimura, R. Oki and T. Oki, Development and Applications of the GSMAp: Overview & Lessons learned in a real-world case for Hydrological Status and Outlook System, *Initial Planning Meeting of WMO Global Hydrological Status and Outlook System (HydroSOS)*, Entebbe, Uganda, Sep. 26-28th, 2017
- Kim, H.**, Recent Advances in Global Hydrology: Modeling and Remote Sensing, *OJERI Seminar*, Korea University, Seoul, Korea, Aug. 4th, 2017
- Kim, H.**, The Land Surface, Snow and Soil-moisture Model Intercomparison Project, *4th International Conference on Hydrology delivers Earth System Sciences to Society*, Tokyo, Japan, May 16-19th, 2017
- Kim, H.**, K. Yoshimura, M. Hatono, Y. Yabu, Y. Ishitsuka, K. Hibino, M. Kachi, R. Oki, and T. Oki, Development of Satellite-Model Integration Framework: Yesterday's Earth on EORC/JAXA, K-Water, Daejeon, Korea, Mar. 13th, 2017
- Kim, H.**, GSWP3 and LS3MIP & Development of Global Land Surface Modeling/Validation/Benchmarking Framework, *ESM SnowMIP Workshop*, San Francisco, USA, Dec. 10th, 2016
- Kim, H.**, GSWP3 and LS3MIP & Development of Global Land Surface Modeling/Validation/Benchmarking Framework, *Bjerknes Center*, Bergen, Norway, Aug. 15th, 2016
- Kim, H.**, Multi-sectoral Impact Assessment of Climate Change, *APEC Climate Center*, Busan, Korea, July 8th, 2016
- Kim, H.**, Development of Global Land Surface Modeling/Validation/Benchmarking Framework, *Korea Meteorological Administration*, Seoul, Korea, July 7th, 2016
- Kim, H.**, GSWP3 and LS3MIP & Development of Global Land Surface Modeling/Validation/Benchmarking Framework, *Workshop on Multi-Model Integration*, IIASA, Laxenburg, Austria, Jun. 13-14th, 2016
- Kim, H.**, Global Land Surface Modeling and Validation/Benchmark Frameworks in the Global Soil Wetness Project Phase 3 (GSWP3), *4th International Workshop on Next-Generation NWP Models*, Jeju, Korea, May 25-27th, 2016
- Kim, H.**, B. van den Hurk, G. Krinner, S. I. Seneviratne, C. Derksen, and T. Oki, The Land Surface, Snow and Soil moisture Model Intercomparison Project (LS3MIP) and Global Soil Wetness Project Phase 3 (GSWP3), *Second U.S. International Land Model Benchmarking (ILAMB) Workshop*, Washington D.C., USA, May 16-20th, 2016
- Kim, H.**, Land Surface, Snow, and Soil-moisture in Land Climate Feedback and Model Diagnosis, *22nd International Symposium on Polar Sciences*, Korea Polar Research Institute, Incheon, Korea, May 10-11th, 2016
- Kim, H.**, Advances in Modeling and Remote Sensing of Hydrology, *7th World Water Forum*, Daegu, Korea, Apr. 12-17th, 2015
- Kim, H.**, Development of a New Global Dataset for Offline Terrestrial Simulations, Korea Institute of Atmosphere Prediction System, Seoul, Korea, June 2013
- Kim, H.**, Recent Advancements of Large-scale Terrestrial Simulations, Korea Institute of Atmosphere Prediction System, Seoul, Korea, October 2012
- Kim, H.**, T. Oki, P.A. Dirmeyer, S.I. Seneviratne, S. Kanae, and J.S. Famiglietti, Verifications of Simulations and Uncertainty Estimations in Ensemble Land Surface Simulations: Exercises in the Global Soil Wetness Project Phase 3, *American Meteorological Society Annual Meeting*, New Orleans, USA, Jan. 22-26th, 2012

AWARDS & HONORS:

Dec. 2018	Top authors, American Geophysical Union, AGU Fall Meeting 2018, Washington, D.C, United States
Dec. 2016	Performance Award (approx. top 5%) for Winter Semester of 2016, Institute of Industrial Science, The University of Tokyo, Tokyo, Japan
Aug. 2016	Bjerknes Visiting Fellow, Bjerknes Center for Climate Research, University of Bergen, Bergen, Norway
Dec. 2014	Performance Award (approx. top 5%) for Winter Semester of 2014, Institute of Industrial Science, The University of Tokyo, Tokyo, Japan
Nov. 2014	Minister's Award (Ministry of Ministry of Science, ICT and Future Planning, Republic of Korea), Big Contest 2014, Seoul, Korea
Sep. 2014	JSHWR Excellent Paper Award of Japan Society of Hydrology and Water Resources for a research paper entitled "Global flood risk under climate change", Y. Hirabayashi et al., Japan,
Jun. 2014	Minister's Award (Ministry of Security and Public Administration, Republic of Korea), Datathon 2014, 1 st Data Day, Seoul, Korea
2009 – 2010	The University of Tokyo Fellowship, Tokyo, Japan