





**Cédric H. David**

Born in Marseille, France – French National, US Permanent Resident (Green Card holder).

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## PROFESSIONAL EXPERIENCE

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- 2014-current **NASA's Jet Propulsion Laboratory (Pasadena, California)**  
Group Supervisor – Terrestrial Hydrology Group (2018-current)  
Hydrology Advisor – Physical Oceanography Distributed Active Archive Centers (PO.DAAC) (2017-current).  
Deputy Project Scientist – Western States Water Mission (WSWM) (2016-2018).  
Scientist – Surface Hydrology Group (2015-2018).  
Scientist – Water & Carbon Cycles Group (2014-2015).
- 2012-2014 **University of California Center for Hydrologic Modeling (Irvine, California)**  
Project Scientist – Development of an integrated state-of-the-art model of California water resources; mentorship of Ph.D. students and Junior Specialists; under Dr. James S. Famiglietti.
- 2009-2012 **University of Texas at Austin (Austin, Texas)**  
Post-doctoral Researcher – Climate System Science group of the Department of Geological Sciences. Study of climate change impacts on water resources and river flow in the Texas Gulf Coast Hydrologic Region, and influence on ecosystems of Texas Bays; mentorship of Ph.D. students; under Dr. Zong-Liang Yang.
- 2007-2008 **Ecole des Mines de Paris (Fontainebleau, France)**  
Graduate Student Visitor – Center for Geosciences (six months). Macroscale River Flow Modeling in collaboration with the French Weather Service (MétéoFrance); under Dr. Florence Habets.
- 2006-2009 **University of Texas at Austin (Austin, Texas)**  
Graduate Research Assistant – Center for Research in Water Resources. Development of a river network routing model called RAPID; under the supervision of Dr. David R. Maidment and Dr. Zong-Liang Yang.
- 2006 **National Center for Atmospheric Research (Boulder, Colorado)**  
Graduate Student Visitor – Research Advanced Laboratory. Modeling of the flow of water across the land surface; under Dr. David Gochis (3 months).
- 2004-2006 **University of Texas at Austin (Austin, Texas)**  
Graduate Research Assistant – Center for Research in Water Resources. Study of salinity in Texas bays; under Dr. Ben R. Hodges.
- 2004 **AmecSpie (Toulouse, France)**  
Intern Engineer – On-site management of sensor installation and testing for the Airbus 380 gas station (3 months).
- 2003 **SOGREAH (Echirolles, France)**  
Intern Engineer – Hydraulic Research Department. Development of empirical relationships between incident waves and overtopping of breakwaters in ports (8 months).
- 2003 **SOGREAH (Echirolles, France)**  
Intern Assistant Engineer – Hydraulic Research Department. Research concerning breakwater overtopping in wave flumes and wave tanks (3 months).
- 2003-2004 **Redbull GmbH (Monaco, Principauté de Monaco)**  
Student Brand Manager – marketing (14 months).

## EDUCATIONAL QUALIFICATIONS

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- 2006-2009 **University of Texas at Austin (Austin, Texas):** Ph.D. in Civil Engineering (graduated in August 2009). Ph.D. Dissertation entitled “Towards river flow computation at the continental scale”. GPA: 3.879 (cumulative Master’s and Ph.D.).
- 2004-2006 **University of Texas at Austin (Austin, Texas):** Master of Science in Environmental and Water Resources Engineering (graduated in May 2006). Master’s Thesis entitled “Deploying a Microstructure Profiler in Corpus Christi Bay”. GPA: 3.860.
- 2001-2004 **Ecole Centrale de Lille (Lille, France):** Master of Science in General Engineering (graduated in September 2004). Specialization in Systems & Control, and Physical planning, Construction and Environment. Ecole Centrale de Lille is of France’s top ten *Grandes Ecoles* of engineering.
- 1999-2001 **Lycée Jacques Decour (Paris, France):** Advanced undergraduate education in the so-called *Classes Préparatoires* for admission into the French *Grandes Ecoles*.

## TEACHING EXPERIENCE

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- 2019 International Center for Integrated Mountain Development (Kathmandu, Nepal), Training of Trainers: Estimation of Groundwater Storage Changes Using GRACE Satellites, 22-24 April 24
- 2018 **University of California, Irvine (Irvine, California):** Department of Computer Science, CS 199 Research Class: Continuous Integration (Winter 2018), Docker (Spring 2018), Research Challenge (Fall 2018), Container Orchestration (Winter 2019).
- 2018(invited) **Bangladesh Agricultural Research Council (Dhaka, Bangladesh):** Remote Sensing of Groundwater (lecture), 26 April.
- 2018(invited) **Flood Forecasting and Warning Center (Dhaka, Bangladesh):** Continental-scale Modeling of Discharge (lecture), 25 April.
- 2017 ICIMOD (Kathmandu, Nepal): SERVIR Training, RAPID and RRR (lecture), 24-27 April.
- 2017(invited) **CUAHSI (Boston, Massachusetts):** CUAHSI/NASA Remote Sensing Hydrology Workshop, The Surface Water and Ocean Topography (SWOT) Mission (invited lecture). 04-06 April.
- 2016(invited) **Biosphere 2 (Oracle, Arizona):** CUAHSI/NASA Remote Sensing Hydrology Workshop, The Surface Water and Ocean Topography (SWOT) Mission (invited lecture). 28-31 March.
- 2015 **Jet Propulsion Laboratory (Pasadena, California):** Geoscience Paper of the Future Training Session: Learn Best Practices for Scholarly Publication, 28 Oct.
- 2015(invited) **National Center for Atmospheric Research (Boulder, Colorado):** Training Workshop: The Community WRF-Hydro Modeling System, RAPID Training (invited lecture). 05-07 May.
- 2014 **University of California, Irvine (Irvine, California):** Department of Earth System Science, upper-division undergraduate and graduate course ESS 132 / ESS 232 Terrestrial Hydrology, substitute lecturer for Evapotranspiration. 25 and 27 February.
- 2013 **University of California, Irvine (Irvine, California):** Department of Earth System Science, upper-division undergraduate and graduate course ESS 132 / ESS 232 Terrestrial Hydrology, substitute lecturer for Evapotranspiration. 19, 21 and 26 February.
- 2012 **University of Texas at Austin (Austin, Texas):** Department of Geological Sciences, upper-division undergraduate and graduate course GEO 377P / GEO 387P Physical Climatology, substitute lecturer for River Modeling and Influence of Climate Change on Terrestrial Water. 01 March.
- 2011(invited) **Chinese Academy of Sciences (Beijing, China):** Institute of Atmospheric Physics, RAPID Training Course (invited lecture). 24-26 May.
- 2011 **University of Texas at Austin (Austin, Texas):** Department of Geological Sciences, upper-division undergraduate and graduate course GEO 377P / GEO 387P Physical Climatology, substitute lecturer for Earth Energy Balance and Oceanic Circulation. 01 and 03 February, 24 March.
- 2010 **University of Texas at Austin (Austin, Texas):** Department of Geological Sciences, graduate course GEO 391 Land Atmosphere Interaction Dynamics, substitute lecturer for Surface Water Balance and Watershed Hydrology. 06 November.
- 2009(invited) **University of North Texas, (Denton, Texas):** Department of Geography, Overview of plate tectonics (invited lecture). 03 April.
- 2006-2007 **University of Texas at Austin (Austin, Texas):** Lyndon B. Johnson School of Public Affairs, coach for the GIS team of graduate course PA682A Assessing Community Needs, Fall 2006 and Spring 2007 semesters.
- 2005 **University of Texas at Austin, (Austin, Texas):** Civil, Architectural and Environmental Engineering Department, Teaching assistant for laboratories and grader for undergraduate course CE356 Elements of Hydraulic Engineering, Spring 2005 semester.

2002 **PrépaMath (Sceaux, France):** Mathematics, Physics and Chemistry tutor during Spring Break (1 month).

## HONORS AND AWARDS

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- 2020 **American Geophysical Union Horton** Water Resources Research Editor's Choice Award for Lin et al. (2019).
- 2018 **National Aeronautics and Space Administration** Early Career Public Achievement Medal.
- 2017 **American Water Resources Association**, Finalist of the William R. Boggess Award, w/r/t Snow et al. (2016).
- 2016 **Jet Propulsion Laboratory** Voyager Award.
- 2014 **Microsoft Research, Azure Research Grant** for a proposal entitled RAPID on Azure. \$45,000 (including \$5,000 extension).
- 2008-2009 **American Geophysical Union Horton** (Hydrology) Research Grant for proposal entitled A Prototype Study of Continental Water Dynamics Using the Guadalupe River Basin. \$10,000
- 2006 **University Corporation for Atmospheric Research:** Advanced Study Program grant for Graduate Student Visitors. \$4,500
- 2006 **University of Texas at Austin:** LBJ School of public affairs, RGK Center for Philanthropy and Community Service, George Foundation Fellow. \$1,000.

## MOST DOWNLOADED PAPERS

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- 2020 **American Geophysical Union** Water Resources Research, Reviewer of a Top Downloaded and/or Cited Article in 2019.
- 2020 **American Geophysical Union** Water Resources Research, Top 10 Most Downloaded Papers in 2018-2019: Lin et al. (2019).
- 2020 **American Geophysical Union** Geophysical Research Letters, Top 10 Most Downloaded Papers in 2018-2019: Zhou et al. (2019).
- 2020 **Frontiers in Environmental Science** Top number of views and downloads in 2019: Purdy et al. (2019).
- 2019 **American Water Resources Association** Journal of the American Water Resources Association Top 20 Most Downloaded Papers in 2017-2018: Salas et al. (2017).
- 2018 **American Water Resources Association** Journal of the American Water Resources Association Top 20 Most Downloaded Papers in 2017: Tavakoly et al. (2016)
- 2018 **American Geophysical Union** Earth and Space Science Top 10 Most Downloaded Papers in 2017: David et al. (2016).

## PEER REVIEWED PUBLICATIONS

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h-index=15 Web of Science [2021-05-02, Adv. Search: AU=(David CH) AND TS=(water OR hydro OR gpf OR river OR tethys) OR AU=(David C) AND TS=(swot)].

- 46 Clark, M. P, C. H. Luce, A. AghaKouchak, W. Berghuijs, **C. H. David**, Q. Duan, S. Ge, I. van Meerveld, C. Zheng, M. B. Parlange, and S. W. Tyler (2021), Open science: Open data, open models, ...and open publications?, *Water Resources Research*, 57, 1-8, DOI: 10.1029/2020WR029480.
- 45 Sikder, M. S., M. Bonnema, C. M. Emery, **C. H. David**, P. Lin, M. Pan, S. Biancamaria, and M. M. Gierach (2021), A Synthetic Dataset Inspired by Satellite Altimetry and Impacts of Sampling on Global Spaceborne Discharge Characterization, *Water Resources Research*, 57(2), 1-12, DOI: 10.1029/2020WR029035.
- 44 Emery, C. M., A. Paris, S. Biancamaria, A. Boone, S. Calmant, P. -A. Garambois, J. Santos da Silva, and **C. H. David** (2020), Discharge Estimation Via Assimilation of Multi-satellite-based Discharge Products: Case Study Over the Amazon Basin, *Geoscience and Remote Sensing Letters*, xx, xx, DOI: 10.1109/LGRS.2020.3020285.
- 43 Allen, G. H., X. Yang, J. Gardener, J. Holliman, C. H. David, and M. Ross (2020), Timing of Landsat Overpasses Effectively Capture Flow Conditions of Large Rivers, *Remote Sensing*, 12(9), 1510, DOI: 10.3390/rs12091510.
- 42 Emery, C. M., S. Biancamaria, A. Boone, S. Ricci, M. C. Rochoux, V. Pedinotti, and **C. H. David** (2020), Assimilation of wide-swath altimetry water elevation anomalies to correct large-scale river routing model parameters, *Hydrology and Earth System Sciences*, 24, 2207–2233, DOI: 10.5194/hess-24-2207-2020
- 41 Massoud, E., M. Turmon, J. Reager, J. Hobbs, Z. Liu, and **C. H. David** (2020), Cascading Dynamics of the Hydrologic Cycle in California Explored through Observations and Model Simulations, *Geosciences*, 10 (71), 1-13, DOI: 10.3390/geosciences10020071.

- 40 Emery, C. M., **C. H. David**, K. M. Andreadis, M. J. Turmon, J. T. Reager, and J. M. Hobbs (2020), Underlying  
Fundamentals of Kalman Filtering for River Network Modeling, *Journal of Hydrometeorology*, 21, 453-474,  
DOI: 10.1175/JHM-D-19-0084.1.
- 39 Sikder, M. S., **C. H. David**, G. H. Allen, X. Qiao, E. J. Nelson, and M. A. Matin (2019), Evaluation of  
Available Global Runoff Datasets through a River Model in Support of Transboundary Water Management in  
South and Southeast Asia, *Frontiers in Environmental Science*, 7:171, DOI: 10.3389/fenvs.2019.00171.
- 38 Yang, Y., P. Lin, C. K. Fisher, M. Turmon, J. Hobbs, C. M. Emery, J. T. Reager, **C. H. David**, H. Lud, K.  
Yang, Y. Hong, E. F. Wood, and M. Pan (2019), Enhancing SWOT Discharge Assimilation through  
Spatiotemporal Correlations, *Remote Sensing of Environment*, 234, 111450, DOI: 10.1016/j.rse.2019.111450.
- 37 Purdy, A. J., **C. H. David**, M. S. Sikder, J. T. Reager, H. A. Chandanpurkar, N. L. Jones, M. A. Matin (2019),  
An open-source tool to facilitate the processing of GRACE Observations and GLDAS outputs: An evaluation  
in Bangladesh, *Frontiers in Environmental Science*, 7:155, DOI: 10.3389/fenvs.2019.00155.
- 36 Nelson, E. J., S. T. Pulla, M. A. Matin, K. Shakya, N. L. Jones, D. P. Ames, W. L. Ellenburg, K. N. Markert,  
**C. H. David**, B. F. Zaitchik, P. Gatlin, and R. Hales (2019), Enabling Stakeholder Decision-Making with Earth  
Observation and Modeling Data Using Tethys Platform, *Frontiers Environmental Science*, 7:148, DOI:  
10.3389/fenvs.2019.00148.
- 35 Qiao, X., E. J. Nelson, D. Ames, Z. Li, **C. H. David**, G. Williams, W. Roberts, J. L. Sanchez-Lozano, C.  
Edwards, M. Souffront, and M. Matin (2019), A Systems Approach to Routing Global Gridded Runoff through  
Local High-Resolution Stream Networks for Flood Early Warning Systems, *Environmental Modelling &  
Software*, 120, 104501, DOI: 10.1016/j.envsoft.2019.104501.
- 34 Lin, P., M. Pan, H. E. Beck, Y. Yang, D. Yamazaki, R. Frasson, **C. H. David**, M. Durand, T. M. Pavelsky, G.  
H. Allen, C. J. Gleason, and E. F. Wood (2019), Global Reconstruction of Naturalized River Flows at 2.94  
Million Reaches, *Water Resources Research*, 55, 6499-6516, DOI: 10.1029/2019WR025287.
- 33 Nickles, C., R. E. Beighley, Y. Zhao, M. T. Durand, **C. H. David**, and H. Lee (2019), How does the unique  
space-time sampling of the Surface Water and Ocean Topography (SWOT) Mission influence river discharge  
series characteristics? *Geophysical Research Letters*, 46, 8154–8161, DOI: 10.1029/2019GL083886.
- 32 Ehalt Macedo, H., R. E. Beighley, **C. H. David**, and J. T. Reager (2019), Using GRACE in a streamflow  
recession to determine drainable water storage in the Mississippi River Basin. *Hydrology and Earth System  
Sciences*, 23, 3269–3277, DOI: 10.5194/hess-23-3269-2019.
- 31 **David, C. H.**, J. M. Hobbs, M. J. Turmon, C. M. Emery, J. T. Reager, and J. S. Famiglietti (2019), Analytical  
Propagation of Runoff Uncertainty into Discharge Uncertainty through a Large River Network, *Geophysical  
Research Letters*, 46, 8102–8113, DOI: 10.1029/2019GL083342.
- 30 Zhou, Y.Q., A. H. Sawyer, **C. H. David**, and J. S. Famiglietti (2019), Fresh submarine groundwater discharge  
to the near-global coast, *Geophysical Research Letters*, 46, 5855–5863, DOI: 10.1029/2019GL082749.
- 29 Stampoulis, D., J. T. Reager, **C. H. David**, K. M. Andreadis, J. S. Famiglietti, T. G. Farr, A. R. Trangsrud, R.  
R. Basilio, J. L. Sabo, G. B. Osterman, P. R. Lundgren, and Z. Liu (2019) Model-data fusion of hydrologic  
simulations and GRACE Terrestrial Water Storage observations to estimate changes in water table depth,  
*Advances in Water Resources*, 128, 13-27, DOI: 10.1016/j.advwatres.2019.04.004.
- 28 Oaida, C. M., J. T. Reager, K. M. Andreadis, **C. H. David**, S. R. Levoe, T. H. Painter, K. J. Bormann, A. R.  
Trangsrud, M. Giroto, J. S. Famiglietti (2018) A high-resolution data assimilation framework for snow water  
equivalent estimation across the Western United States and validation with the Airborne Snow Observatory,  
*Journal of Hydrometeorology*, 20, 357-378, DOI: 10.1175/JHM-D-18-0009.1.
- 27 Zhou, Y., K. M. Befus, A. H. Sawyer, and **C. H. David** (2018), Opportunities and challenges in computing  
fresh groundwater discharge to continental coastlines: A multimodel comparison for the United States Gulf and  
Atlantic Coasts, *Water Resources Research*, DOI: 10.1029/2018WR023126.
- 26 Lin, P., Z. -L. Yang, D. J. Gochis, W. Yu, D. R. Maidment, M. A. Somos-Valenzuela, and **C. H. David** (2018),  
Implementation of a vector-based river network routing scheme in the community WRF-Hydro modeling  
framework for flood discharge simulation, *Environmental Modelling & Software*, 107, 1-11, DOI:  
10.1016/j.envsoft.2018.05.018.
- 25 Allen, G. H., **C. H. David**, K. M. Andreadis, F. Hossain, and J. S. Famiglietti (2018), Global estimates of river  
flow wave travel times and implications for low-latency satellite data, *Geophysical Research Letters*, DOI:  
10.1029/2018GL077914
- 24 Hossain, F., M. Srinivasan, C. Peterson, A. Andral, et al. (2017), Engaging the User Community for Advancing  
Societal Applications of the Surface Water Ocean Topography (SWOT) mission, *Bulletin of the American  
Meteorological Society*, DOI: 10.1175/BAMS-D-17-0161.1
- 23 Knights, D, K. C. Parks, A. H. Sawyer, **C. H. David**, T. N. Browning, K. M. Danner, and C. D. Wallace  
(2017), Direct groundwater discharge and vulnerability to hidden nutrient loads along the Great Lakes coast of  
the United States, *Journal of Hydrology*, 554, 331-341, DOI: 10.1016/j.jhydrol.2017.09.001.

- 22 Salas, F. R., M. A. Somos-Valenzuela, A. Dugger, D. R. Maidment, D. J. Gochis, **C. H. David**, W. Yu, D. Ding, E. P. Clark, and N. Noman (2017), Towards Real-Time Continental Scale Streamflow Simulation in Continuous and Discrete Space, *Journal of the American Water Resources Association*, DOI: 10.1111/1752-1688.12586.
- 21 **David, C. H.**, Y. Gil, C. H. Duffy, S. D. Peckham, and S. K. Venayagamoorthy (2016), An Introduction to the special Issue on Geoscience Papers of the Future, *Earth and Space Science*, 3, 441–444, DOI: 10.1002/2016EA000201.
- 20 Fournier, S., J. T. Reager, T. Lee, J. Vasquez-Cuervo, **C. H. David**, and M. M. Gierach, (2016), SMAP observes flooding from land to sea: the Texas event of 2015, *Geophysical Research Letters*, 43, 10,338–10,346, DOI: 10.1002/2016GL070821.
- 19 Tavakoly, A. A., A. D. Snow, **C. H. David**, M. L. Follum, D. R. Maidment, Z. –L. Yang (2016), Continental Scale River Flow Modeling of the Mississippi River Basin Using High Resolution NHDPlus Dataset, *Journal of the American Water Resources Association*, 1-22. DOI: 10.1111/1752-1688.12456.
- 18 Gil, Y., **C. H. David**, I. Demir, B. T. Essawy, R. W. Fulweiler, J. L. Goodall, L. Karlstrom, H. Lee, H. J. Mills, J. –H. Oh, S. A. Pierce, A. Pope, M. W. Tzeng, S. R. Villamizar, and X. Yu (2016), Towards the Geoscience Paper of the Future: Best Practices for Documenting and Sharing Research from Data to Software to Provenance, *Earth and Space Science*, 3, 388-415, DOI: 10.1002/2015EA000136.
- 17 Sawyer, A. H., **C. H. David**, and J. S. Famiglietti (2016), Continental patterns of submarine groundwater discharge reveal coastal vulnerabilities, *Science*, 353(6300), 705-707. DOI:10.1126/science.aag1058.
- 16 Snow, A. D., S. D. Christensen, N. R. Swain, J. Nelson, D. P. Ames, N. L. Jones, D. Ding, N. Noman, **C. H. David**, F. Pappenberger (2016), A High-Resolution National-Scale Hydrologic Forecast System from a Global Ensemble Land Surface Model, *Journal of the American Water Resources Association*, 1-15, DOI: 10.1111/1752-1688.12434.
- 15 **David, C. H.**, J. S. Famiglietti, Z. –L. Yang, F. Habets, and D. R. Maidment (2016), A Decade of RAPID – Reflections on the Development of an Open Source Geoscience Code, *Earth and Space Science*, 3, 1-19, DOI: 10.1002/2015EA000142.
- 14 Solander, K., J. T. Reager, B. F. Thomas, **C. H. David**, and J. S. Famiglietti (2016), Simulating human water regulation: the development of an optimal complexity, climate-adaptive reservoir management model for an LSM, *Journal of Hydrometeorology*, 17:3, 725-743, DOI: 10.1111/1752-1688.12355.
- 13 Lin, P., Z. –L. Yang, X. Cai, and **C. H. David** (2015), Development and evaluation of a physically-based lake level model for water resource management: A case study for Lake Buchanan, Texas, *Journal of Hydrology: Regional Studies*, 4(B), 661-674. DOI: 10.1016/j.ejrh.2015.08.005.
- 12 Tavakoly, A. Ah, D. R. Maidment, T. Whiteaker, J. McClelland, Z. –L. Yang, **C. H. David**, and C. Griffin (2015), A GIS Framework for Regional Modeling of Riverine Nitrogen Transport: Case Study: San Antonio and Guadalupe Basins, *Journal of the American Water Resources Association*, 52(1), 1-15. DOI: 10.1111/1752-1688.12355.
- 11 **David, C. H.**, J. S. Famiglietti, Z. –L. Yang, and V. Eijkhout (2015), Enhanced fixed-size parallel speedup with the Muskingum method using a trans-boundary approach and a large sub-basins approximation, *Water Resources Research*, 51(9), 1-25, DOI: 10.1002/2014WR016650.
- 10 Häfliger, V., E. Martin, A. Boone, F. Habets, **C. H. David**, P.A. Garambois, H. Roux, and S. Ricci, L. Berthon, A. Thévenin (2015), Evaluation of regional-scale water level simulations using various river routing schemes within a hydrometeorological modelling framework for the preparation of the SWOT mission, *Journal of Hydrometeorology*, 16(4), 1821–1842, DOI: 10.1175/JHM-D-14-0107.1.
- 9 Bierkens, M. F. P., V. A. Bell, P. Burek, N. Chaney, L. E. Condon, **C. H. David**, A. de Roo, P. Döll, N. Drost, J. S. Famiglietti, M. Flörke, D. J. Gochis, P. Houser, R. Hut, J. Keune, S. Kollet, R. M. Maxwell, J. T. Reager, L. Samaniego, E. Sudicky, E. H. Sutanudjaja, N. van de Giesen, H. Winsemius, and E. F. Wood (2015), Hyper-resolution global hydrological modelling: what is next? *Hydrological Processes*, 29(2), 310-320, DOI: 10.1002/hyp.10391.
- 8 Habets, F., E. Philippe, E. Martin, **C. H. David**, and F. Leseur (2014), Small farm dams: impact on river flows and sustainability in a context of climate change, *Hydrology and Earth System Sciences*, 18, 4207-4222, DOI:10.5194/hess-18-4207-2014.
- 7 Cai, X., Z. -L. Yang, **C. H. David**, G. -Y. Niu, and M. Rodell (2014), Hydrological evaluation of the Noah-MP land surface model for the Mississippi River Basin, *Journal of Geophysical Research – Atmospheres*, 119, 1-16, DOI: 10.1002/2013JD020792.
- 6 **David, C. H.**, Z. -L. Yang and J. S. Famiglietti (2013), Quantification of the upstream-to-downstream influence in the Muskingum method, and implications for speedup in parallel computations of river flow, *Water Resources Research*, 49(5), 1-18, DOI: 10.1002/wrcr.20250.

- 5 Smith, V. B., **C. H. David**, M. B. Cardenas and Z. -L. Yang (2013), Climate, river network, and vegetation cover relationships across a climate gradient and their potential for predicting effects of decadal-scale climate change, *Journal of Hydrology*, 488, 101-109, DOI: 10.1016/j.jhydrol.2013.02.050.
- 4 **David, C. H.**, Z. -L. Yang and S. Hong (2013), Regional-scale river flow modeling using off-the-shelf runoff products, thousands of mapped rivers and hundreds of stream flow gauges, *Environmental Modelling & Software*, 42, 116-132. DOI: 10.1016/j.envsoft.2012.12.011.
- 3 **David, C. H.**, F. Habets, D. R. Maidment and Z. -L. Yang (2011), RAPID applied to the SIM-France model, *Hydrological Processes*, 25(22), 3412-3425, DOI: 10.1002/hyp.8070.
- 2 **David, C. H.**, D. R. Maidment, G.-Y. Niu, Z. -L. Yang, F. Habets and V. Eijkhout (2011), River network routing on the NHDPlus dataset, *Journal of Hydrometeorology*, 12(5), 913-934. DOI: 10.1175/2011JHM1345.1.
- 1 **David, C. H.**, D. J. Gochis, D. R. Maidment, W. Yu, D. N. Yates and Z. -L. Yang (2009). Using NHDPlus as the land base for the Noah-distributed model, *Transactions in GIS*, 13(4), 363-377, DOI: 10.1111/j.1467-9671.2009.01169.x.

## SOFTWARE PUBLICATIONS

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2020	David, C. H. (2020), RRR v1.1.0,	Zenodo, DOI: 10.5281/zenodo.3765369
2020	David, C. H. (2020), RAPID v1.8.0,	Zenodo, DOI: 10.5281/zenodo.3765342
2019	David, C. H. (2019), RRR v1.0.0,	Zenodo, DOI: 10.5281/zenodo.3236651
2019	David, C. H. (2019), RAPID v1.7.0,	Zenodo, DOI: 10.5281/zenodo.3236497
2015	David, C. H. (2015), RAPID v1.6.0,	Zenodo, DOI: 10.5281/zenodo.2560556
2015	David, C. H. (2015), RAPID v1.5.0,	Zenodo, DOI: 10.5281/zenodo.2560538
2013	David, C. H. (2013), RAPID v1.4.0,	Zenodo, DOI: 10.5281/zenodo.24756
2013	David, C. H. (2013), RAPID v1.3.0,	Zenodo, DOI: 10.5281/zenodo.27243
2011	David, C. H. (2011), RAPID v1.2.0,	Zenodo, DOI: 10.5281/zenodo.27242
2011	David, C. H. (2011), RAPID v1.1.0,	Zenodo, DOI: 10.5281/zenodo.27241
2010	David, C. H. (2010), RAPID v1.0.0,	Zenodo, DOI: 10.5281/zenodo.27239
Ongoing	<a href="https://github.com/c-h-david/rapid">https://github.com/c-h-david/rapid</a>	Routing Application for Parallel computation of Discharge DOI: 10.5281/zenodo.593867 (to cite all versions)
	<a href="https://github.com/c-h-david/rrr">https://github.com/c-h-david/rrr</a>	Reproducible Routing Rituals DOI: 10.5281/zenodo.3236649 (to cite all versions)
	<a href="https://github.com/c-h-david/shbaam">https://github.com/c-h-david/shbaam</a>	Satellite Hydrology Bits Analysis And Mapping
	<a href="https://github.com/c-h-david/moshpyt">https://github.com/c-h-david/moshpyt</a>	Multiple Operating Systems Herded for Python Testing

## DATA PUBLICATIONS

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2020	Allen, G. H., X. Yang, J. Gardener, J. Holliman, C. H. David, and M. Ross (2020), Supporting Datasets produced in Allen et al. (2020) Timing of Landsat Overpasses Effectively Captures Flow Conditions of Large Rivers, DOI: 10.5281/zenodo.3817346.
2020	Emery, C. M., C. H. David, K. M. Andreadis, M. J. Turmon, J. T. Reager, and J. M. Hobbs (2020), RRR/RAPID input and output files corresponding to "Underlying Fundamentals of Kalman Filtering for River Network Modeling", DOI: 10.5281/zenodo.3688691.
2020	Sikder, M. S., M. Bonnema, C. M. Emery, C. H. David, P. Lin, M. Pan, S. Biancamaria, and M. M. Gierach (2021), A Synthetic Global Spatiotemporal Sampled River Discharge Database for Different Satellite Altimetry Mission Orbits, DOI: 10.5281/zenodo.3542269.
2019	David, C.H., J. M. Hobbs, M. J. Turmon, C. M. Emery, J. T. Reager, and J. S. Famiglietti (2019), RRR/RAPID input and output files corresponding to "Analytical Propagation of Runoff Uncertainty into Discharge Uncertainty through a Large River Network", DOI: 10.5281/zenodo.2665084.
2019	Zhou, Y., A. H. Sawyer, C. H. David, and J. S. Famiglietti (2019), Output files corresponding to "Fresh submarine groundwater discharge to the near-global coast", DOI: 10.5281/zenodo.1489341.
2018	Zhou, Y., K. M. Befus, A. H. Sawyer, and C. H. David (2018), Output files corresponding to "Opportunities and challenges in computing fresh groundwater discharge to continental coastlines: A multimodel comparison for the United States Gulf and Atlantic Coasts", DOI: 10.5281/zenodo.1164306.
2018	Allen, G. H., C. H. David, K. M. Andreadis, F. Hossain, and J. S. Famiglietti (2018), Supporting Datasets produced in Allen et al. (2018) Global estimates of river flow wave travel times and implications for low-latency satellite data", DOI: 10.5281/zenodo.1015798.

- 2017 Knights, D, K. C. Parks, A. H. Sawyer, C. H. David, T. N. Browning, K. M. Danner, and C. D. Wallace (2017), Output Files Corresponding To "Direct Groundwater Discharge And Vulnerability To Hidden Nutrient Loads Along The Great Lakes Coast Of The United States", DOI: 10.5281/zenodo.1011074
- 2016 Sawyer, A. H., C. H. David, and J. S. Famiglietti (2016), Output files corresponding to "Continental patterns of submarine groundwater discharge reveal coastal vulnerabilities", DOI: 10.5281/Zenodo.58871
- 2011 David, C. H., F. Habets, D. R. Maidment and Z. -L. Yang (2011), RAPID input and output files corresponding to "RAPID Applied to the SIM-France Model", DOI: 10.5281/Zenodo.30228.
- 2011 David, C. H., D. R. Maidment, G.-Y. Niu, Z. -L. Yang, F. Habets and V. Eijkhout (2011), RAPID input and output files corresponding to "River Network Routing on the NHDPlus Dataset", DOI: 10.5281/Zenodo.16565.

## CONFERENCE PROCEEDINGS

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- 2014 Zhao, T., B. S. Minsker, J. -S. Lee, F. R. Salas, D. R. Maidment, C. H. David, Real-time Water Decision Support Services for Droughts, Proceedings of the 11th International Conference on Hydroinformatics (HIC 2014), New York, NY, August 17 – 21, 2014.
- 2012 Tavakoly, A. A., C. H. David, D. R. Maidment and Z. -L. Yang, An Upscaling Process for Large-scale Vector-based River Networks Using the NHDPlus Dataset, Proceedings of the American Water Resources Association Spring Specialty Conference on Geographic Information Systems and Water Resources, available at <http://www.awra.org/proceedings/Spring2012/oral.html>

## COMMUNITY WHITE PAPERS

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- 2021 Biancamaria, S, D. Blumstein, F. Birol, S. Calmant, J.-F. Crétaux, C. H. David, P.-A. Garambois, F. Frappart, T. Gascon, M. Gosset, A. Kouraev, S. Legrand, P.-O. Malaterre, D. Medeiros Moreira, S. Munier, F. Papa, A. Paris, K. Soungalo, J. Verron, H. Yesou1 (2021), SMASH Mission Requirements, CNES Internal Document.
- 2020 Clark, M. P., C. H. Luce, A. Aghakouchak, W. Berghuijs, C. H. David, Q. Duan, S. Ge, I. van Meerveld, C. Zheng, and M. Parlange (2020), Report from the AGU Hydrology Section Open Access Task Force, AGU Hydrology Section Newsletter, 7-22, July 2020, [available online](#).
- 2016 Pavelsky, T. M., C. H. David, R. O. Green, S. Fournier, C. I. Michailovsky, S. Calmant, J. -F. Cretaux, J. D. Bales, S. Biancamaria, T. S. Bianchi, C. Dupouy, M. M. Gierach, C. B. Jones, B. Laignel, M. P. Lamb, C. J. Legleiter, J. -M. Martinez, J. M. Melack, F. E. Muller-Karger, J. E. Richey, E. Rodriguez, M. Simard, and L. C. Smith (2016), From the Mountains to the Sea: Interdisciplinary Science and Applications Driven by the Flow of Water, Sediment, and Carbon II, 2017-2027 Decadal Survey for Earth Science and Applications from Space of the National Academies of Sciences, Engineering and Medicine, 2<sup>nd</sup> Request for Information, submitted on 2016-05-17, [available online](#).
- 2015 Pavelsky, T. M., C. H. David, J. D. Bales, M. M. Gierach, L. Giosan, M. P. Lamb, C. J. Legleiter, J. M. Melack, F. E. Muller-Karger, J. E. Richey, E. Rodriguez, M. Simard, and L. C. Smith (2015), From the Mountains to the Sea: Interdisciplinary Science and Applications Driven by the Flow of Water, Sediment, and Carbon, 2017-2017 Decadal Survey for Earth Science and Applications from Space of the National Academies of Sciences, Engineering and Medicine, Request for Information, submitted on 2015-11-02, [available online](#).

## SELECTED MEDIA SCIENCE ADVISING AND HIGHLIGHTS

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- 2020 Mullen, L., NASA/JPL Podcast, On A Mission Episode 4: A World Shaped by Water, published online on 10 November 2020.
- 2020 SERVIR Global, Streamflow Monitoring, Enhancing Flood Early Warning Services, and High Impact Weather Assessment, YouTube Video published on 01 June 2020.
- 2019 Bierkens, M. F. P., Reconstructing Natural Streamflow at Unprecedented Resolution (2019), Eos, Editors' Highlights, published online on 03 September 2019.
- 2018 Rasmorduc, V., As The Flood Flows (2018), June 2018 Image of the Month, Aviso+ Satellite Altimetry Data, published online on 01 June 2018.
- 2018 Viñas, M. -J., Before the Flood Arrives (2018), NASA Earth Research Findings, published online on 28 April 2018.
- 2017 Bouthillette, J. -F., Barrages Sous Surveillance: La Leçon d'Oroville (2017), Les Années Lumière, Ici Radio Canada, radio broadcast on 19 February 2017.
- 2016 Witze, A., Geoscience data project struggles (2016), Nature, published online and in print on 20 October 2016.
- 2016 Rice, D., U.S. coast at risk of hidden contamination (2016), USA Today, published online on 05 August 2016.



- 2016 Stone, M., The Sneaky Reason US Coastlines Are Becoming More Polluted (2016), Gizmodo, published online on 04 August 2016.
- 2016 Crespi, S., Podcast: Pollution hot spots in coastal waters, extreme bees, and diseased dinos (2016), Science, Radio broadcast on 04 August 2016.
- 2016 Underwood, E., Much of U.S. coastline vulnerable to hidden contamination (2016), Science, published online on 04 August 2016.
- 2015 Bernard, A., D. Lemieux, and P. Gagné, Notre eau est-elle à l'abri des changements climatiques (2015), Découvertes, Ici Radio Canada Télé, TV broadcast on 06 December 2015.
- 2015 Bernard, A., D. Lemieux, and P. Gagné, Notre eau est-elle à l'abri des changements climatiques (2015), Découvertes, Ici Radio Canada Télé, published online on 06 December 2015.
- 2015 Woodhouse, Leighton (2015). California Has No Idea How Much Water It Has Left. NASA Can Help, The New Republic, published online on 27 May 2015.
- 2015 Srivastava, C., La Californie à sec (2015), Les Années Lumière, Ici Radio Canada, radio broadcast on 03 May 2015.
- 2015 Srivastava, C., La Californie manque d'eau (2015), Les Années Lumière, Ici Radio Canada, published online on 01 May 2015.
- 2015 Microsoft Research, Centralizing national flood data in the cloud can help reduce loss of life and property (2015), Microsoft. Published online on 23 March 2015.
- 2012 Giordani, A., Modeling the arteries of the land (2012), Science Node. Published online on 24 October 2012.
- 2012 Agresta, M., The "D" Word: Drought (2012), The Alcade, published online on 30 April 2012 and in paper in the May/June issue.
- 2012 Mashhood, F., Water experts assess aftermath of drought during University of Texas forum (2012), The Austin American Statesman. Published online on 13 February 2012 and in paper in the 14 February 2012 issue.

## **PRESENTATIONS (PRESENTING AUTHOR)**

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- 2021(invited) David, C. H., C. M. Emery, M. J. Turmon, J. M. Hobbs, J. T. Reager, J. S. Famiglietti, M. S. Sikder, M. Bonnema, R. Frasson, and M. Durand, River Discharge Modeling and Uncertainty in the Context of Satellite (invited remote presentation), Uncertainty Quantification in Climate Science Virtual Workshop, Pasadena, CA, 23 Mar.
- 2020(invited) Bonnema, M. G., and C. H. David, Remotely Monitoring Lake and Reservoir Area Changes Globally using Cloud Computing(invited remote presentation), Virtual Workshop on Towards a Global Surface Water Extent product from SAR, Pasadena, CA, 15 Jul.
- 2020(invited) David, C. H., Session I Discussion: New Directions in Water Resources Engineering and Hydrology (invited panelist), USC Workshop on Aquatic Ecosystem Sustainability, Los Angeles, CA, 22 May.
- 2019 David, C. H., M. S. Sikder, A. J. Purdy, J. T. Reager, E. J. Nelson, N. L. Jones, T. H. Painter, J. S. Famiglietti, M. A. Matin, S. M. Skiles, and G. H. Allen, Managing the Changing Water Resources South of the Himalayas (presentation), SERVIR Applied Sciences Team Meeting, Washington, DC, 27 June.
- 2019 David, C. H., C. M. Emery, M. J. Turmon, J. M. Hobbs, J. T. Reager, J. S. Famiglietti, K. M. Andreadis, M. Pan, R. E. Beighley, and M. Rodell, Underlying Fundamentals of Uncertainty Quantification and Kalman Filtering for River Network Modeling (presentation), SWOT Science Team Meeting, Bordeaux, France, 19 June.
- 2018 David, C. H., Sikder, M. S., G. H. Allen, C. M. Emery, M. A. Matin, W. Roberts, E. J. Nelson, N. L. Jones, B. M. Zaitchik, P. N. Gatlin, W. L. Ellenburg, Historical reconstruction and near-term forecasts of surface water in South Asia (presentation), American Geophysical Union Fall Meeting, San Francisco, CA, 11 December.
- 2018(invited) David, C. H., Terrestrial Hydrology at NASA's Jet Propulsion Laboratory (invited remote seminar), Tufts University, Boston, MA, 07 December.
- 2018 David, C. H., J. T. Reager, T. H. Painter, J. S. Famiglietti, M. A. Matin, S. M. Skiles, G. H. Allen, M. S. Sikder, Managing the Changing Water Resources South of the Himalayas (presentation), SERVIR Annual Global Exchange, Lisbon, Portugal, 12 November.
- 2018(invited) David, C. H., Terrestrial Hydrology at NASA's Jet Propulsion Laboratory (invited seminar), University of Arizona, Tucson, AZ, 08 November.
- 2018 David, C. H., C. M. Emery, M. J. Turmon, J. M. Hobbs, J. T. Reager, J. S. Famiglietti, K. M. Andreadis, and R. E. Beighley, Uncertainty Quantification for River Discharge and implications for Data Assimilation (presentation), SWOT Science Team Meeting, Montreal, Canada, 28 June.
- 2018 David, C. H., M. Gierach, A. W. Bingham, Getting Ready for SWOT (presentation), PO.DAAC Users Working Group Meeting, Pasadena, CA, 15 May.



- 2018 David, C. H., J. T. Reager, S. M. Skiles, T. H. Painter, J. S. Famiglietti, M. A. Matin, S. M. Skiles, G. Allen, and C. M. Emery, Managing the Changing Water Resources South of the Himalayas (presentation), SERVIR SERVIR Hindu Kush Himalaya Stakeholder Workshop, Dhaka, Bangladesh, 24 April.
- 2017 David, C. H., K. M. Andreadis, J. S. Famiglietti, R. E. Beighley, A. A. Boone, D. Yamazaki, H. Kim, J. -M. Fiset, E. Rodriguez, S. Biancamaria, R. C. Paiva, C. F. Fisher, H. -J. Kim, S. Biancamaria, G. J. -P. Schumann, W. Collischonn, River Model Inter-comparison for SWOT (poster), American Geophysical Union Fall Meeting, San Francisco, CA, 13 December.
- 2017 David, C. H., J. T. Reager, T. H. Painter, J. S. Famiglietti, M. A. Matin, S. M. Skiles, G. Allen, Managing the Changing Water Resources South of the Himalayas (presentation), SERVIR Annual Global Exchange, Bilbao, Spain, 09-13 October.
- 2017 David, C. H., K. M. Andreadis, J. S. Famiglietti, R. E. Beighley, A. A. Boone, D. Yamazaki, H. Kim, J. -M. Fiset, E. Rodriguez, S. Biancamaria, R. Paiva, River Model Inter-comparison for SWOT (presentation), SWOT Science Team Meeting, Toulouse, France, 28 June.
- 2017 David, C. H., J. T. Reager, T. H. Painter, J. S. Famiglietti, M. A. Matin, S. M. Skiles, Managing the Changing Water Resources South of the Himalayas (presentation), SERVIR Hindu Kush Himalaya Stakeholder Workshop, International Center for Integrated Mountain Development (ICIMOD), Kathmandu, Nepal, 20-21 April.
- 2017(invited) David, C. H., Preparing for the integration of SWOT measurements into global terrestrial hydrologic models (invited remote presentation), 2<sup>nd</sup> SWOT Applications User Workshop, U.S. Geological Survey Headquarters, Reston, VA, 05 April.
- 2017(invited) David, C. H., Continental Scale Hydro Model Inter-comparison for SWOT (invited seminar presentation), Scripps Institution of Oceanography, La Jolla, CA, 23 March.
- 2017(invited) David, C. H., Continental Scale Hydro Model Inter-comparison for SWOT (invited seminar presentation), GeoClub Seminar Series, California Institute of Technology, Pasadena, CA, 16 March.
- 2017(invited) David, C. H., Continental Scale Hydro Model Inter-comparison for SWOT (invited seminar presentation), University of Arkansas, Fayetteville, AR, 09 March.
- 2017(invited) David, C. H., A. H. Sawyer, and J. S. Famiglietti, Continental patterns of submarine groundwater discharge reveal coastal vulnerabilities (invited presentation), Association for the Sciences of Limnology and Oceanography, ASLO 2017 Aquatic Sciences Meeting, Honolulu, HI, 27 February.
- 2016 David, C. H., K. M. Andreadis, J. S. Famiglietti, R. E. Beighley, A. A. Boone, D. Yamazaki, H. -J. Kim, J. -M. Fiset, E. Rodriguez, S. Biancamaria, and R. C. Paiva, Preparing for the ingestion of SWOT data into continental-scale river models (poster), American Geophysical Union Fall Meeting, San Francisco, CA, 13 December.
- 2016 David, C. H., J. T. Reager, S. M. Skyles, T. H. Painter, J. S. Famiglietti, and M. Matin, Managing the Changing Water Resources South of the Himalayas (poster), SERVIR Annual Global Exchange, Pokhara, Nepal, 27 October.
- 2016 David, C. H., J. T. Reager, S. M. Skyles, T. H. Painter, J. S. Famiglietti, and M. Matin, Managing the Changing Water Resources South of the Himalayas (presentation), SERVIR Applied Sciences Team Kickoff Meeting, Huntsville, AL, 13-15 September.
- 2016 David, C. H., K. M. Andreadis, J. S. Famiglietti, R. E. Beighley, A. A. Boone, D. Yamazaki, H. -J. Kim, E. Gaborit, E. Rodriguez, and S. Biancamaria, Integration of SWOT measurements into global hydro models (poster), SWOT Science Team Meeting, Pasadena, CA, 13-16 June.
- 2016(invited) David, C. H., Getting Ready for the Global Surface Water Observations of SWOT (invited presentation), CIESS Workshop on Global Water Cycles and World Water Resources: Past, Present and Future, University of Texas at Austin, Austin, Texas, 21-22 April.
- 2015(invited) David, C. H. (invited participant), CUAHSI-NCAR First Synthesis Workshop On Improving Hydrologic Processes in Earth System Models, National Center for Atmospheric Research, Boulder, Colorado, 05-06 October.
- 2015(invited) David, C. H., RAPID, Big Picture (invited remote presentation), National Flood Interoperability Experiment (NFIE) Spring 2015 Workshop, National Water Center, Tuscaloosa, Alabama, 17 March.
- 2015(invited) David, C. H., Challenges in usage and sustainable development of RAPID (invited presentation), GeoSoft Advisory Committee, Information Sciences Institute, Marina del Rey, California, 11 March.
- 2015 David, C. H., Inclusion of Surface Water Diversions in Modeling Rivers and Streams (presentation), Open Water Data Initiative Drought Visualization Meeting, Bureau of Reclamation, Boulder City, Nevada, 25 February.
- 2015 David, C. H., Modeling Surface Water Bodies, Over Large Domains, on Big Computers (presentation), UCLA/JPL Workshop, Joint Institute for Regional Earth System Science and Engineering, Los Angeles, CA 02 February.

- 2014(invited) David, C. H., J. S. Famiglietti, F. R. Salas, T. L. Whiteaker, D. R. Maidment, K. M. Tolle, River Modeling Beyond Discharge at Gauges (invited poster), American Geophysical Union Fall Meeting, San Francisco, CA, 15 December.
- 2014(invited) David, C. H. (invited researcher), Microsoft Research, Redmond, WA, 07-11 July.
- 2014 David, C. H. How RAPID works (presentation), Environmental Systems Research Institute, Redlands, CA, 11 June.
- 2014(invited) David, C. H. Modeling terrestrial hydrologic features across the scales of SWOT (invited presentation), NASA's Jet Propulsion Laboratory, Pasadena, CA, 13 May.
- 2014(invited) David, C. H. (invited participant), National Science Foundation EarthCube Assembly Synthesis Workshop, Tucson, AZ, 16-18 April.
- 2014(invited) David, C. H. (invited participant), National Science Foundation EarthCube End User/ Professional Societies Workshop, Washington, DC, 18-20 March.
- 2014 David, C. H., J. T. Reager, and J. S. Famiglietti, Hyper-resolution modeling of surface water – challenges and opportunities (presentation), Workshop on Hyper-resolution Global Hydrologic Modeling: The Next Steps, Utrecht, Netherlands, 13-14 February.
- 2013 David, C. H. and J. S. Famiglietti, Accounting for anthropogenic actions in modeling of stream flow at the regional scale (poster), American Geophysical Union Fall Meeting, San Francisco, CA, 09 December.
- 2013 David, C. H. and J. S. Famiglietti, Inclusion of a simple reservoir model in regional-scale surface water modeling (presentation), Texas Water Forum III, Austin, TX, 14-15 October.
- 2013(invited) David, C. H., Using CUAHSI HIS for Regional-scale River Flow Modeling – How Hydroinformatics can Support Computational Hydrology (invited presentation), CUAHSI Conference on Hydroinformatics and Modeling, Logan, UT, 17-19 July.
- 2013(invited) David, C. H., On the Use of Technology to Enable the Flow of Digital Rivers at Continental-Scale (invited presentation), National Science Foundation EarthCube Modeling Workshop for the Geosciences, Boulder, CO, 23 April.
- 2013(invited) David, C. H., Raising the Bar for Speedup in Parallel Computing of River Flow (invited seminar presentation), Center for Integrated Earth System Science, University of Texas at Austin, Austin, TX, 20 March.
- 2012 David, C. H. and Z. -L. Yang, Computing flow in mapped rivers of the United States using national datasets (poster), American Geophysical Union Fall Meeting, San Francisco, CA, 05 December.
- 2012(invited) David, C. H. (invited participant) National Science Foundation EarthCube Early Career Strategic Visioning Workshop, Carnegie Institution of Science, Washington, DC, 16-17 October.
- 2012(invited) David, C. H. (invited participant) National Science Foundation EarthCube Charrette, Rosslyn, VA on 12-14 June.
- 2012(invited) David, C. H., Z. -L. Yang, Estimation of Current and Future Water Resources Available in Texas from Continental-Scale Datasets (invited presentation), American Water Works Association Annual Conference & Exposition, Dallas, TX, 10-14 June.
- 2012(invited) David, C. H., About Our Current Knowledge of Water in River Systems at the Continental-Scale (invited seminar presentation), University of California at Irvine, Irvine, CA, 14 May.
- 2012 David, C. H., Z. -L. Yang, D. R. Maidment and F. Habets, Getting ready for SWOT: modeling of water flow and height in thousands of mapped rivers covering hundreds of thousands of square kilometers (poster), American Geophysical Union Chapman Conference on Remote Sensing of the Terrestrial Water Cycle, Kona, HI, 21 February.
- 2012 David, C. H., D. R. Maidment, Z. -L. Yang, River Modeling as Big as Texas (presentation), Texas Water Forum, Austin, TX, 13 February.
- 2012 David, C. H., Z. -L. Yang and S. Hong, Regional-scale river modeling using thousands of mapped rivers, off-the-shelf runoff products and hundreds of stream flow gages (poster), 92nd American Meteorological Society Annual Meeting, 26th Conference on Hydrology, New Orleans, LA, 23 January.
- 2011 Yang, Z. -L., C. H. David, Z. Xu, A. A. Tavakoly, X. Cai, L. C. Helper, D. R. Maidment, J. W. McClelland, C. G. Griffin, P. A. Montagna, E. L. Turner, H. Xie and W. Hao, An Integrated Earth System Science Approach for Predicting Nutrient Transports from the Land to the Ocean modeling (poster), NASA Carbon Cycle and Ecosystems Joint Science Workshop, Alexandria, VA, 03 October.
- 2011(invited) David, C. H., Fundamentals of next-generation river modeling (invited presentation), Regional Earth System Modeling and Analysis (RESMA) Symposium, Beijing, China, 20 May.
- 2011(invited) David, C. H. David, invited workshop participant, Community Hydrologic Modeling Project (CHyMP) Implementation Workshop, Irvine, CA, 15-17 March.
- 2011 Tavakoly, A., X. Cai, C. H. David, D. R. Maidment, and Z. -L. Yang, Land surface hydrology and river modeling for the Mississippi River Basin using NLDAS2 data (poster), Community Hydrologic Modeling Project (CHyMP) Implementation Workshop, Irvine, CA, 16 March.

- 2010(invited) David, C. H., Water, humans, energy and change (invited seminar presentation), Royal Institute of Technology (KTH), Stockholm, Sweden, 17 November.
- 2010 David, C. H., Fundamentals of next-generation continental-scale river modeling & future of Texas rivers (seminar presentation), Climate Brown Bag Seminar, Department of Geological Sciences, University of Texas at Austin, Austin, TX, 23 July.
- 2009 David, C. H., D. R. Maidment, S. Hong, G.-Y. Niu, Z. -L. Yang, River network routing in all rivers of the Texas Gulf (presentation), American Geophysical Union Fall meeting, San Francisco, CA, 17 December.
- 2009(invited) David, C. H., Perspective on global climate change (invited panelist), Projection of movie “Home”, Cinéma Français Today film festival, Austin, TX, 12 October.
- 2009 David, C. H., Towards river flow computation at large scale (seminar presentation), National Center for Environmental Prediction, Environmental Modeling Center, Suitland, MD, 05 August.
- 2009(invited) David, C. H., Towards the calculation of river flow at regional and continental scales (invited seminar presentation), University of North Texas, Denton, TX, 03 April.
- 2009(invited) David, C. H., Towards the calculation of river flow at regional and continental scales (invited seminar presentation), Boise State University, Boise, ID, 17 March.
- 2009 David, C. H., A case-study of Continental Water dynamics in the Guadalupe and San Antonio River Basins (presentation), Renaissance Computing Institute, Chapel Hill, NC, 05 March.
- 2008 David, C. H., G.-Y. Niu, D. R. Maidment, Z. -L. Yang, Routing Application for Parallel computation of Discharge (poster), American Geophysical Union Fall meeting, San Francisco, CA, 19 December.
- 2008 David, C. H., G.-Y. Niu, D. R. Maidment and Z. -L. Yang, Simultaneous parallel computation of river flow in all river reaches of the Texas Gulf (poster), Severe Storm Prediction, Education and Evacuation from Disasters (SSPEED) conference, Houston, TX, 30 October.
- 2008 David, C. H., Continental Water Dynamics of the Guadalupe River Basin (presentation), GIS Hydro Pre-Conference Seminar, ESRI User Conference, San Diego, CA, 03 August
- 2008 David, C. H. and F. Habets, A macroscale river routing model used in MODCOU (seminar presentation), Météo France, Toulouse, France, 31 January.
- 2008 David, C. H., D. J. Gochis, D. R. Maidment, Z. -L. Yang and F. Habets, Continental water dynamics modeling (poster), Catchment-scale hydrologic Modeling and Data Assimilation (CAHMDA) workshop, Melbourne, Australia, 10 January
- 2007 David, C. H., Continental Water Dynamics Modeling (presentation), GIS Hydro Pre-Conference Seminar, ESRI User Conference, San Diego, CA, 17 June
- 2007 David, C. H., D. J. Gochis, D. R. Maidment and O. Wilhelmi, Linking hydrology and atmospheric science in continental water dynamics modeling (poster), Hydrological cycle in Mediterranean Experiment (HyMeX) workshop, Toulouse, France, 10 January.
- 2006 David, C. H., D. J. Gochis, D. R. Maidment and O. Wilhelmi, Linking hydrology and atmospheric science in continental water dynamics modeling (presentation), American Geophysical Union Fall meeting, San Francisco, CA, 11 December.

## **PRESENTATIONS (CONTRIBUTING AUTHOR)**

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I no longer keep track of my co-authored presentations.

## **FUNDED PROJECTS**

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- 2021-2024 Co-Investigator, Development of a Fused CYGNSS-Landsat Surface Water Dataset for Investigations of Mekong River Basin Dynamics, funder under NASA ROSES NNH20ZDA001N-CYGNSS: CYGNSS Competed Science Team.
- 2021-2026 Principal Investigator, Evaluating the Ability of a Small Sat Constellation to Capture the Dynamics of Earth’s Rivers and Lakes, funder under NASA ROSES NNH20ZDA001N-EUSPI: Earth Science U.S. Participating Investigator for 5 years.
- 2019-2022 Principal Investigator, A Golden Era for Hydrology from Space, funded under JPL Strategic Initiative for the Research and Technology Development Fund for FY20.
- 2018-2020 Principal Investigator, Filling the Space/Time Gaps Between Surface Water Retrievals, funded under NASA ROSES NNH17ZDA001N-THP: Terrestrial Hydrology for 3 years.
- 2017-2019 Principal Investigator, Improving Terrestrial Hydrology Simulations through the Inclusion of Reservoirs in a Numerical Model of River Networks, funded by the U.S. Army Corps of Engineers for 2 years.
- 2016-2019 Principal Investigator, Managing the Changing Water Resources South of the Himalayas, funded under NASA ROSES NNH15ZDA001N-SERVIR: SERVIR Applied Sciences Team for 3 years.

- 2016-2019 Co-Investigator, SMAP observations to trace the lifecycle of hydrologic extreme events from land to ocean, funded under NASA ROSES NNH15ZDA001N-SUSMAP: Science Utilization of the Soil Moisture Active-Passive Mission for 3 years.
- 2016-2019 Co-Investigator, Advancing the science on hydrologic states using GRACE: The role of terrestrial water storage in extreme events, funded under NASA ROSES NNH15ZDA001N-GRACE: GRACE and GRACE-FO Science Team for 3 years.
- 2016-2020 Co-Investigator, Integrating lateral contributions and longitudinal controls along river reaches to improve SWOT discharge estimates, funded under NASA ROSES NNH15ZDA001N-SWOT: Surface Water and Ocean Topography Science Team for 4 years.
- 2016-2020 Principal Investigator, Integration of SWOT Measurements into global terrestrial hydrologic models, funded under NASA ROSES NNH15ZDA001N-SWOT: Surface Water and Ocean Topography Science Team for 4 years.
- 2016-2020 Collaborator, Developing a global assimilation and modeling framework to produce SWOT data products, funded under NASA ROSES NNH15ZDA001N-SWOT: Surface Water and Ocean Topography Science Team for 4 years.

## SERVICE

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### Editorial roles

- Guest editor for AGU's Earth & Space Science call for [Geoscience Papers of the Future](#) (2015-2017).

### Meeting convener

- Scientific Committee Member, Hydrospace-GEOGloWS 2021, Rome, Italy, Jun 2021.
- Session Convener, "High Rate Data Access & Post-Processing", SWOT Science Team Meeting, Bordeaux, France, Jun 2019.
- Session Convener, "IN33A: Big Data in the Geosciences: New Approaches to Storage, Sharing, and Analysis I & II", American Geophysical Union Fall Meeting, Washington, DC, Dec 2018.
- Session Convener, "Expected hydrologic observations and data sharing capabilities for the Surface Water and Ocean Topography (SWOT) Mission", CUAHSI Biennial Meeting, Shepherdstown, WV, Aug 2018.
- Session Convener, "Remote Sensing of the Terrestrial Hydrologic Cycle (I) and (II)", 42<sup>nd</sup> COSPAR Scientific Assembly, Pasadena, CA, Jul 2018.
- Deputy Organizer, "A3.1: Advances in Earth Observation and Technology for Global Terrestrial Cycles", 42<sup>nd</sup> COSPAR Scientific Assembly, Pasadena, CA, Jul 2018
- Session Convener, "Hydrological and Hydrodynamical Models, and Data Assimilation I", SWOT Science Team Meeting, Montreal, Canada, Jun 2018.
- Session Convener, "SWOT & Global Models", SWOT Science Team Meeting, Toulouse, France, Jun 2017.
- Session Convener, "W3: Hydrologic Forecast and Data Assimilation", 4<sup>th</sup> Hydrology delivers Earth System Science to Society, Tokyo, Japan, May 2017.
- Session Convener, "H53F: Regional to Global Surface water storage and Runoff: Remote Sensing, in situ Data and Modeling I & II", American Geophysical Union Fall Meeting, San Francisco, CA, Dec 2015.

### Coordination

- Lead, Surface Water and Ocean Topography Science Team Working Group on Continental-scale Hydro Model Intercomparison (2015-2019).
- Lead Coordinator for the JPL Water Initiative Workshop: Terrestrial Water Cycle Frontiers: Challenges in Observation, Modeling and Applications (16 Sep 2015)
- Coordinator for monthly meetings of the JPL's Water Initiative (Jan 2015 – Jan 2016)
- Coordinator of the Water Forum "Texas Drought 2012, are we prepared?" (<http://www.jsg.utexas.edu/ciess/events>), a 1-day event with 130 registered attendees from universities and water agencies across Texas.
- Coordinator for the annual meeting of the U.S. National Aeronautics and Space Administration Interdisciplinary Science Project NNX11AE42G (28 September 2011 in Austin, TX).
- Coordinator for the annual meeting of the U.S. National Aeronautics and Space Administration Interdisciplinary Science Project NNX07AL79G (21 October 2010 in Austin, TX).
- Coordinator for the weekly research meetings of the Land Environment Atmosphere Dynamics research group, Jackson School of Geosciences, University of Texas at Austin (2009-2012).
- Coordinator for the monthly Happy Hour of the Climate System Science Graduate Program, Jackson School of Geosciences, University of Texas at Austin (2009-2010).

### Advisory committees

- Board Member, JPL Observational Products for End-Users from Remote Sensing Analysis (OPERA), in support of NASA's Satellite Needs Working Group (2020-2021).

- Appointed member of the AGU Hydrology Section Task Force on Open Access Model Evaluation for Water Resources Research (2019-2021)
- Appointed member of the AGU Hydrology Section Remote Sensing Technical Committee (2017-current).
- Member of the advisory committee for the NSF EarthCube [OntoSoft](#) Project, and Ambassador for the [Geoscience Paper of the Future](#) (2015-2017).

#### **Hiring committees**

- Co-Chair for “Hydrologic Research and Applications aided by Earth-orbiting Satellites”, JPL Terrestrial Hydrology Group (2020-2021)
- Committee Member for Senior Scientist Position, Caltech/Carnegie (2020-2021)
- Chair for “Terrestrial Hydrologic Science from Satellite Observations”, JPL Terrestrial Hydrology Group (2019-2020)
- Committee Member (“Satellite Data Assimilation for Hydrology”), JPL Terrestrial Hydrology Group (2019-2020)

#### **Peer reviews for funding agencies**

- Reviewer for a National Science Foundation Review Panel (Fall 2020).
- Invited Panelist and Reviewer for a National Aeronautics and Space Administration Review Panel (Winter 2018).
- Reviewer for a Natural Sciences and Engineering Research Council of Canada (Winter 2018).
- Reviewer for a National Aeronautics and Space Administration Review Panel (Spring 2015).
- Reviewer for a National Science Foundation Review Panel (Fall 2014).
- Reviewer for a National Aeronautics and Space Administration Review Panel (Summer 2014).
- Reviewer for a National Science Foundation Review Panel (Spring 2014).
- Invited Panelist and Reviewer for a National Science Foundation Review Panel (Spring 2013).

#### **Peer reviews for international scientific journals**

- Reviewer for the Proceeding of the National Academy of Sciences of the United States of America (2 assignments).
- Reviewer for Nature Scientific Reports (1 assignment).
- Reviewer for Geophysical Research Letters (10 assignments).
- Reviewer for American Geophysical Union Books (2 assignments).
- Reviewer for Monthly Weather Review (1 assignment).
- Reviewer for Water Resources Research (8 assignments).
- Reviewer for Journal of Hydrology (2 assignments).
- Reviewer for Hydrology and Earth System Sciences (2 assignments).
- Reviewer for Nonlinear Processes in Geophysics (1 assignment).
- Reviewer for the Journal of Hydrometeorology (11 assignments).
- Reviewer for the Journal of Geophysical Research – Atmospheres (3 assignments).
- Reviewer for the Journal of Geophysical Research – Space Physics (2 assignments).
- Reviewer for Environmental Modelling and Software (2 assignments).
- Reviewer for Hydrological Processes (2 assignments).
- Reviewer for the Journal of the American Water Resources Association (1 assignment).

#### **Student/Postdoctoral supervision**

- Postdoctoral Supervisor, Matthew G. Bonnema, 14 October 2019 – 29 November 2020.
- Postdoctoral Supervisor, Md. Safat Sikder, 29 October 2018 – 28 October 2020.
- Postdoctoral Supervisor, Charlotte M. Emery, 15 June 2017 – 14 June 2019.
- Postdoctoral Supervisor, George H. Allen, 01 June 2017 – 31 May 2018.
- Science advisor for the NASA DEVELOP project “Monitoring Streamflow in Los Angeles County using NASA Sensor Data” (Jan 2015 – Mar 2015). Team members were Gwen Miller, Rosemarie Wrigley, Claudia Knudson and Montana Marshall.
- Contribution to the supervision of Ph.D. students at the University of California at Irvine: Collin Lawrence (Oct 2012 – Dec 2014), Huidong Liu (Oct 2012 – Aug 2013), Zhao Liu (Oct 2012 – Dec 2014), and Kurt Solander (Oct 2012 – Aug 2013).
- Contribution to the supervision of Junior Specialists at the University of California Center for Hydrologic Modeling: Rachel Druffel-Rodriguez (Mar 2013 – Jun 2013), Hyungtae Kim (May 2013 – Aug 2014).
- Contribution to the supervision of Ph.D. students at the University of Texas at Austin: Xitian Cai (Jan 2011 to Aug 2012) and Ahmad Tavakoly (Jan 2011 to Aug 2012).

## **ADDITIONAL SKILLS**

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### **Languages**

- French: Native speaker.
- English: Excellent writing and presentation skills.
- Spanish: Basics.

### **Computer skills**

- Excellent knowledge of MacOS, Microsoft Windows, and Linux (including cloud and parallel computers).
- Routine user of version control, continuous integration, and container deployment.
- Extensive programming experience in Shell, Fortran, and Python.
- ESRI ArcGIS applied to Water Resources.

## **EXTRA CURRICULAR ACTIVITIES**

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**Sports:** Racquetball; water sports: swimming (12 years), surfing, water skiing, wake boarding; snowboarding.

**Travels:** France, Spain, Italy, Belgium, Netherlands, Greece, England, USA, Canada, Mexico, Jamaica, West Indies, Australia, Turkey, Hungary, Poland, Brazil, Germany, China, Bolivia, Peru, Colombia, Nicaragua, Costa Rica, Nepal, Argentina, Bangladesh, Singapore, Portugal, Thailand.

**Interests:** Cooking, drums, percussions and bass guitar, collecting vinyl records.