Alexandra Georges Konings

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Dept. of Earth System Science and, by courtesy, of Geophysics
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EDUCATION

Massachusetts Institute of Technology 2015
Ph.D. in Civil and Environmental Engineering (Hydrology)
Duke University 2011
M.S. in Environmental Science
Massachusetts Institute of Technology 2009
S.B. in Environmental Engineering Science

PROFESSIONAL APPOINTMENTS

Stanford University
Associate Professor 09/2023-Present
Assistant Professor 09/2016-08/2023
Stanford University
Postdoctoral Fellow
- located at Columbia University 09/2015-02/2016
- located at NASA Jet Propulsion Laboratory 03/2016-08/2016

Massachusetts Institute of Technology
Graduate Research Assistant 2011 - 2015
Duke University
Graduate Research Assistant 2009-2011

HONORS AND AWARDS

Sloan Research Fellowship 2023
AGU Global Environmental Change Early Career Award 2021
AGU Editor's Citation for Excellence in Refereeing (Geophys Research Lett) 2020
NSF CAREER 2020
NASA New (Early Career) Investigator Award 2018
NASA Group Achievement Award: AirMOSS Implementation Team 2016
MIT CEE Best Doctoral Thesis Award 2016
NASA Earth and Space Science Fellowship 2012-15
NSF Graduate Research Fellowship 2009-12
James B. Duke Fellowship 2009-11
Chi Epsilon National Civil Engineering Honors Society 2008

PEER-REVIEWED PUBLICATIONS

Students and postdocs completing work primarily at Stanford underlined

95. Zhao, M., V. Humphrey, A. Feldman, and **A.G. Konings** (2024). Temperature is an important omission when interpreting vegetation optical depth. *Geophysical Research Letters,* in revision.
94. **Konings, A.G.**, K. Rao, E.L. McCormick, A.T. Trugman, A.P. Williams, N.S. Diffenbaugh, M. Yebra, and M. Zhao (2024). Tree species explain only half of explained spatial variability in plant water sensitivity. *Global Change Biology*, 30:e17425.
93. Byrne, M.P, G. Hegerl, J. Scheff, O. Adam, A. Berg, M. Biasutti, ... **A.G. Konings**, ...and Y. Zhang. Theory and the future of land-climate science. *Nature Geoscience,* in press.
92. Restrepo Acevedo A.M., J.S. Guo, S.A. Kannenberg, M.A. Benson, R. Diaz, D.M. Johnson, G. Koch, **A.G. Konings,** L.E.L. Lowman, J. Martinez-Vilalta, R. Poyatos, J. Schenk, D. Beverly, W.R.L. Anderegg, A.M. Matheny, K. McCulloh, J.B. Nippert, R.S. Oliveira, and K.A. Novick (2024) PSINet: A new global water potential network. *Tree physiology*, in press.
91. Wood, J.D., M. Detto, M. Browne, N.J.B. Kraft, **A.G. Konings**, J.B. Fisher, G.R. Quetin, A.T. Trugman, T.S. Magney, C.D. Medeiros, N. Vinod, T.N. Buckley, and L. Sack (2024). The ecosystem as super-organ/ism, revisited: scaling hydraulics to forests under climate change. *Integrative and Comparative Biology,* in press.
90. Novick, K.A., D.L. Ficklin, C. Grossiord, **A.G. Konings**, J. Martinez-Vilalta, W. Sadok, A.T. Trugman, A.P. Williams, A.J. Wright, J.T. Abatzoglou, M.P. Dannenberg, P. Gentine, K. Guan, M.R. Johnston, L.E.L. Lowman, D.J.P. Moore, and N.G. McDowell (2024). The impacts of rising vapor pressure deficit in natural and managed ecosystems. *Plant, Cell, and Environment*, in press.
89. Worden, M., C.A. Famiglietti, P.A. Levine, S. Ma, A.A Bloom, D. Bonal, C. Stahl, and **A.G. Konings** (2024). Inferred drought-induced plant allocation shifts and their impact on drought legacy at a tropical forest site. *Global Change Biology*, 30(5): e17287.
88. Feldman, A.F., X. Feng, A.J. Felton, **A.G. Konings**, A.K. Knapp, J.A. Biederman, and B. Poulter (2024). Plant responses to changing rainfall frequency and magnitude. *Nature Reviews Earth and Environment,* 5:276-294.
87. Holtzman, N., B. Sloan, A. Potkay, G. Katul, X. Feng, **A.G Konings** (2024). Ecosystem water-saving timescale varies spatially with typical drydown length. *AGU Advances*, 5, e2023AV001113.
86. Yao, Y., V. Humphrey, **A.G Konings**, Y. Wang, Y. Yin, N. Holtzman, J.D. Wood, Y. Bar-On, and C. Frankenberg (2024). Investigating diurnal and seasonal cycles of Vegetation Optical Depth retrieved from GNSS signals in a broadleaf forest. *Geophysical Research Letters*, 51, e2023GL107121.
85. Mencuccini, M., W.R.L. Anderegg, O. Binks, T. Knipfer, **A.G. Konings**, K. Novick, R. Poyatos, J. Martinez-Vilalta (2024). A new empirical framework to quantify soil and atmospheric drivers on plant water status. *Global Change Biology*, 30, e17222.

84. Famiglietti, C.A., M. Worden, L.D.L. Anderegg, and **A.G. Konings** (2024). Impacts of climate timescale on the stability of trait-environment relationships. *New Phytologist*, 241: 2423-2434.
83. Levine, P.A., A.A. Bloom, K.W. Bowman, J.T. Reager, J.R. Worden, J. Liu, N.C. Parazoo, V. Meyer, **A.G. Konings**, and M. Longo (2024). Water stress dominates 21st-century tropical land carbon uptake. *Global Biogeochemical Cycles*, 37, e2023GB007702.
82. Holtzman, N., Y. Wang, J.D. Wood, C. Frankenberg, and **A.G. Konings** (2023) Constraining plant hydraulics with microwave radiometry in a land surface model: Impacts of temporal resolution. *Water Resources Research*, 59(11):e2023WR03548.
81. Giardina, F, P. Gentine, **A.G. Konings**, S.I. Seneviratne, and B.N. Stocker (2023). Diagnosing evapotranspiration responses to water deficit across biomes using deep learning. *New Phytologist*, 240: 968-983.
80. Rao, K, A.P. Williams, N.S. Diffenbaugh, M. Yebra, C. Bryant, and **A.G. Konings** (2023). Dry live fuels increase the likelihood of lightning-caused fires. *Geophysical Research Letters, 50*: e2022GL100975.
79. Feldman, A.F., D.J. Short Gianotti, J. Dong, R. Akbar, W.T. Crow, K.A. McColl, **A.G. Konings**, J.B. Nippert, S.J. Tumber-Dávila, N.M. Holbrook, F.E. Rockwell, R.L. Scott, R.F. Reichle, A. Chatterjee, J. Joiner, B. Poulter, and D. Entekhabi (2023). Remotely sensed soil moisture can capture dynamics relevant to plant water uptake. *Water Resources Research,* 59: e2022WR033814.
78. Stocker, B.D., S.J. Tumber-Dávila, **A.G. Konings**, M.C. Anderson, C. Hain, and R.B. Jackson (2023). Global patterns of water storage in the rooting zones of vegetation. *Nature Geoscience*.
77. Quetin, G.R., C.A. Famiglietti, N.C. Dadap, A.A. Bloom, K.W. Bowman, N.S. Diffenbaugh, J. Liu, and **A.G. Konings** (2023). Attributing past carbon fluxes to CO_2 and climate change: respiration response to CO_2 fertilization shifts regional distribution of the carbon sink. *Global Biogeochemical Cycles*, 37, e2022GB007478.
76. Famiglietti, C.A., M. Worden, G.R. Quetin, T.L. Smallman, U. Dayal, A.A. Bloom, M. Williams, and **A.G. Konings** (2023). Global net biome CO_2 exchange predicted comparably well using parameter–environment relationships and plant functional types. *Global Change Biology*, 29: 2256-2273.
75. Zhao, M., G.A., Y. Liu, and **A.G. Konings** (2022). Evapotranspiration frequently increases during droughts. *Nature Climate Change*, 12:1024-1030.
74. Gordon, B.L., W.T. Crow, **A.G. Konings**, D.N. Dralle, and A.A. Harpold (2022). Can We Use the Water Budget to Infer Upland Catchment Behavior? The Role of Data Set Error Estimation and Interbasin Groundwater Flow. *Water Resources Research*, 58:e2021WR030966.
73. Quetin, G.R., L.D.L. Anderegg, **A.G. Konings**, and A.T. Trugman (2022). Quantifying the global power needed for sap ascent in plants. *Journal of Geophysical Research - Biogeosciences*, 127:e2022JG006922.
72. Liu, Y., O. Flournoy, Q. Zhang, K.A. Novick. R.D. Koster, and **A.G. Konings** (2022). Canopy height and climate dryness parsimoniously explain spatial variation of unstressed stomatal conductance. *Geophysical Research Letters*, 49:e2022GL099339.

71. Vereecken, H., W. Amelung, S.L. Bauke, H. Bogena, N. Brüggeman, C. Montzka, J. Vanderborght, M. Bechtold, G. Blöshl, A. Carminati, M. Javaux, **A.G. Konings**, J. Kusche, I. Neuweiler, D. Or., S. Steele-Dunne, A. Verhoef, M. Young, and Y. Zhang (2022). Soil hydrology in the Earth system. *Nature Reviews Earth & Environment*, 3: 573-587.
70. Dadap, N.C., A.R. Cobb, A.M. Hoyt, C.F. Harvey, A.F. Feldman, E.-S. Im, and **A.G. Konings** (2022). Climate change-induced peatland drying in Southeast Asia. *Environmental Research Letters,* 17:074026.
69. Lu, Y, B. Sloan, S.E. Thompson, **A.G. Konings**, G. Bohrer, A. Matheny, and X. Feng (2022). Intra-specific variability in plant hydraulic parameters inferred from model inversion of sap flux data. *Journal of Geophysical Research - Biogeosciences*, 127:e2021JG006777.
68. Jian, J., V. Bailey, K. Dorheim, **A.G. Konings**, D. Hao, A.N. Shiklomanov, A. Snyder, M. Steele, M. Teramoto, R. Vargas, and B. Bond-Lamberty (2022). Historically inconsistent productivity and respiration fluxes in the global terrestrial carbon cycle. *Nature Communications,* 13:1733.
67. Novick, K., D.L. Ficklin, D. Baldocchi, K. Davis, T. Ghezzehei, **A.G. Konings**, N. MacBean, N. Raoult, R.L. Scott, Y. Shi, B.N. Sulman, and J. D. Wood (2022). Confronting the water potential information gap. *Nature Geoscience,* 15:158-164.
66. Rao, K., A.P. Williams, N.S. Diffenbaugh, M. Yebra, and **A.G. Konings** (2022). Plant-water sensitivity regulates wildfire vulnerability. *Nature Ecology and Evolution*, 6:332-339.
65. Kannenberg, S.A., J.S. Guo, K.A Novick, W.R.L Anderegg, X. Feng, D. Kennedy, **A.G. Konings**, J. Martinez-Vilalta, and A.M. Matheny (2022). Opportunities, challenges, and pitfalls in characterizing plant water-use strategies. *Functional Ecology*, 36: 24-37.
64. Oner, D., M. Kozinski, L. Citraro, N.C. Dadap, **A.G. Konings**, and P.V. Fua (2022). Promoting connectivity of network-like structures by enforcing region separation. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 44(9): 5401-5413.
63. Diffenbaugh, N.S., **A.G. Konings**, and C.B. Field (2021). Atmospheric variability contributes to increasing wildfire weather, but not as much as global warming. *Proceedings of the National Academy of Sciences*, 118(46): e2117876118.
62. **Konings A.G.**, S.S. Saatchi, C. Frankenberg, M. Keller, V. Leshyk, W.R.L. Anderegg, V. Humphrey, A.M. Matheny, A. Trugman, L. Sack, E. Agee, M.L. Barnes, O. Binks, K. Cawse-Nicholson, B.O. Christoffersen, D. Entekhabi, P. Gentine, N. Holtzman, G.G. Katul, Y. Liu, ..., and P.A. Zuidema (2021). Detecting Forest Response to Droughts with Global Observations of Vegetation Water Content. *Global Change Biology*, 27: 6005-6024.
61. Durand, M., A. Barros, J. Dozier, R. Adler, S. Cooley, D. Entekhabi, B.A. Forman, **A.G. Konings**, W.P. Kustas, J.D. Lundquist, T.M. Pavelsky, M. Rodell, and S. Steele-Dunne (2021). Achieving breakthroughs in global hydrologic science by unlocking the power of multisensor, multidisciplinary Earth observations. *AGU Advances,* 2, e2021AV000455.
60. **Konings, A.G.**, N.M. Holtzman, K. Rao, L. Xu, and S. Saatchi (2021). Interannual variations of vegetation optical depth are due to both water stress and biomass changes. *Geophysical Research Letters*, 48, e2021GL095267.

59. Liu, Y, **A.G. Konings**, D. Kennedy, and P. Gentine (2021). Global coordination in plant physiological and rooting strategies in response to water stress, *Global Biogeochemical Cycles,* 35, e2020GB006758.
58. Famiglietti, C.A., A.M. Michalak, and **A.G. Konings** (2021)**.** Extreme wet events as important as extreme dry events in controlling spatial patterns of vegetation greenness anomalies. *Environmental Research Letters,* 16:074014.
57. Xu, X., **A.G. Konings**, M. Longo, A. Feldman, L. Xu, S. Saatchi, D. Wu, J. Wu, and P. Moorcroft (2021). Leaf surface water, not plant water stress, drives diurnal variation in tropical forest canopy water content. *New Phytologist*, 231:122-136.
56. Liu, Y., N.M. Holtzman, and **A.G. Konings** (2021). Global ecosystem-scale plant hydraulic traits retrieved using model-data fusion. *Hydrology and Earth System Science,* 25:2399-2417.
55. Famiglietti, C.A., T.L. Smallman, P.A. Levine, S. Flack-Parin, G.R. Quetin, V. Meyer, N.C. Parazoo, S.G. Stettz, Y. Yang, D. Bonal, A.A. Bloom, M. Williams, and **A.G. Konings** (2021). Optimal model complexity for terrestrial carbon cycle prediction. *Biogeosciences*, 18:2727-2754.
54. Dadap, N.C., A.M. Hoyt, A.R. Cobb, D. Oner, M. Kozinski, P. Fua, K. Rao, C.F. Harvey, and **A.G. Konings** (2021). Drainage canals in Southeast Asian peatlands increase carbon emissions. *AGU Advances*, 2(1): e2020AV000321.
53. Worden, J., S. Saatchi, M. Keller, A.A. Bloom, J. Liu, N.C. Parazoo, J.B. Fisher, K. Bowman, J.T. Reager, K. Fahy, D. Schimel, R. Fu, S. Worden, Y. Yin, P. Gentine, **A.G. Konings**, G.R. Quetin, M. Williams, H. Worden, M. Shi, and A. Barkhordarian (2021). Satellite observations of the tropical terrestrial carbon balance and interaction with the water cycle during the 21st century. *Reviews of Geophysics*, 59: e2020RG00711.
52. Feldman, A.F., D. Short Gianotti, **A.G. Konings**, P. Gentine, and D. Entekhabi (2021). Patterns of plant rehydration and growth following pulses of soil moisture availability. *Biogeosciences,* 18:831-847.
51. Holtzman N.M., L.D.L Anderegg, S. Kraatz, A. Mavrovic, O. Sonnentag, C. Pappas, M.H. Cosh, A. Langlois, T. Lakhankar, D. Tesser, N. Steiner, A. Colliander, A. Roy, and **A.G. Konings** (2021). L-band vegetation optical depth as an indicator of plant water potential in a temperate deciduous forest stand. *Biogeosciences,* 18:739-753*.*
50. Li, X., J-P. Wigneron, F. Frappart, L. Fan. P. Ciais, R. Fensholt, D. Entekhabi, M. Brandt, **A.G. Konings**, A. Al-Yaari, X. Liu, and M. Wang (2021). Global-scale assessment and inter-comparison of recently developed/reprocessed microwave satellite vegetation optical depth products. *Remote Sensing of Environment*, 253:112208*.*
49. Ciais P., Y. Yao, T. Gasser, A. Baccini, Y. Wang, R. Lauerwald, S. Peng, A. Bastos, W. Li, P.A. Raymond, J.G. Canadell, G.P. Peters, R.J. Andres, J. Chang, C. Yue, A.J. Dolman, V. Haverd, J. Hartmann, G. Laruelle, **A.G. Konings**, A.W. King, Y. Liu, S. Luyssaert, F. Maignan, P.K. Patra, A. Peregon, P. Regnier, J. Pongratz, B. Poulter, A. Shvidenko, R. Valentini, R. Wang, G. Broquet, Y. Yin, J. Zscheischler, B. Guenet, D.S. Goll, A.P. Ballantyne, H. Yang, C. Qiu, and D. Zhu (2021). Empirical estimates of regional carbon budgets imply reduced global soil heterotrophic respiration. *National Science Review*, 8:nwaa145.

48. Bloom, A.A., K.W. Bowman, J. Liu, **A.G. Konings**, J.R. Worden, N.C. Parazoo, V. Meyer, J.T. Reager, H.M. Worden, Z. Jiang, G.R. Quetin, T.L. Smallman, J.-F. Exbrayat, Y. Yin, S.S. Saatchi, M. Williams, and D.S. Schimel (2020). Lagged effects regulate the inter-annual variability of the tropical carbon balance. *Biogeosciences,* 17:6393-6422*.*
47. Wu, G., K. Guan, Y. Li, K. Novick, X. Feng, N. McDowell, **A.G Konings**, S.E. Thompson, J.S. Kimball, M. De Kauwe, E.A. Ainsworth, and C. Jiang (2020). Interannual variability of ecosystem iso/anisohydry is regulated by environmental dryness. *New Phytologist*, 229:2562-2575*.*
46. Anderegg, W.R.L., A.T. Trugman, G. Badgley, **A.G. Konings**, and J. Shaw (2020). Divergent forest sensitivity to repeated extreme droughts, *Nature Climate Change*, 10: 1091-1095.
45. Colliander, A., M.H Cosh, V.R. Kelly, S. Kraatz, L. Bourgeau-Chavez, P. Siqueira, A. Roy, **A.G. Konings**, N Holtzman, S. Misra, D. Entekhabi, P. O'Neill, and S.H. Yueh (2020). SMAP detects soil moisture under temperate forest canopies. *Geophysical Research Letters,* 47, e2020GL089697.
44. Burnett, M.W., G.R. Quetin, and **A.G. Konings** (2020). Data-driven estimates of evapotranspiration and its controls in the Congo basin. *Hydrology and Earth System Science,* 24, 4189-4211.
43. Liu, Y., M. Kumar, G.G. Katul, X. Feng, and **A.G. Konings** (2020). Plant hydraulics accentuates the effect of atmospheric moisture stress on transpiration. *Nature Climate Change,* 10:691-695.
42. Rao, K., A.P. Williams, J. Fortin Flefil, and **A.G. Konings** (2020). SAR-enhanced mapping of live fuel moisture content. *Remote Sensing of Environment,* 245: 111797.
41. Gruber, A., G. De Lannoy, C. Albergel, A. Al-Yaari, L. Brocca, J.-C. Calvet, A. Colliander, M. Cosh, W. Crow, W. Dorigo, C. Draper, M. Hirshi, Y. Kerr, **A.G. Konings**, W. Lahoz, K. McColl, C. Montzka, J. Muñoz-Sabater, J. Peng, R. Reichle, P. Richaume, C. Rüdiger, T. Scanlon, R. Van der Schalie, J.-P. Wigneron and W. Wagner (2020), Validation practices for satellite soil moisture products: What are (the) errors?, *Remote Sensing of Environment*, 244:111806.
40. Quetin G.R, A.A. Bloom, K.W. Bowman, and **A.G. Konings** (2020). Carbon flux variability from a relatively simple ecosystem model with assimilated data is consistent with terrestrial biosphere model estimates, *Journal of Advances in Modeling Earth Systems,* 12: e2019MS001889.
39. Karthikeyan, L., M. Pan, **A.G. Konings**, M. Piles, R. Fernandez-Moran, D. Nagesh Kumar, and E.F. Wood (2019): Simultaneous retrieval of global-scale vegetation optical depth, surface roughness, and soil moisture using X-band AMSR-E observations, *Remote Sensing of Environment,* 234: 111473.
38. Dadap, N.C., A.R. Cobb, A.M. Hoyt, C.F. Harvey, and **A.G. Konings** (2019): Satellite soil moisture observations predict burned area in Southeast Asian peatlands, *Environmental Research Letters,* 14, 094014.
37. **Konings, A.G.**, A.A. Bloom, J. Liu, N.C. Parazoo, D.S. Schimel, and K.W. Bowman (2019): Global, satellite-driven estimates of heterotrophic respiration, *Biogeosciences,* 16 (11), 2269-2284.

36. Rao, K., W.R.L. Anderegg, A. Sala, J. Martinez-Vilalta, and **A.G. Konings** (2019). Satellite-based vegetation optical depth as an indicator of drought-driven tree mortality. *Remote Sensing of Environment*, 227:125-136.
35. **Konings, A.G**., K. Rao, and S.C. Steele-Dunne (2019): Macro to micro: microwave remote sensing of plant water content for physiology and ecology, *New Phytologist,* 223:1166-1172.
34. Novick, K.N., **A.G. Konings**, and P. Gentine (2019): Beyond soil water potential: an expanded view on isohydricity including land-atmosphere interactions and phenology, *Plant, Cell, and Environment,* 42:1802-1815.
33. Jagdhuber, T., **A.G. Konings**, K.A. McColl, S.H. Alemohammad, N. N. Das, C. Montzka , M. Link, R. Akbar, and D. Entekhabi (2019): Physics-Based Modeling of Active and Passive Microwave Covariations Over Vegetated Surfaces. *IEEE Transactions in Geoscience and Remote Sensing,* 57(2):788-801.
32. Feldman, A.F., D.J. Short Gianotti, **A.G. Konings**, K.A. McColl, R. Akbar, and G.D. Salvucci, D. Entekhabi (2018): Moisture pulse-reserve in the soil-plant continuum observed across biomes, *Nature Plants*, 4:1026-1033.
31. Anderegg W.R.L, **A.G Konings**, A.T. Trugman, K. Yu, D.R. Bowling, R. Gabbitas, D.S. Karp, S. Pacala, J.S. Sperry, B.N. Sulman, and N. Zenes (2018): Hydraulic diversity of forests regulates ecosystem resilience during drought. *Nature,* 561:538-541.
30. Giardina, F., **A.G. Konings**, D. Kennedy, S.H. Alemohammad, R.S. Oliviera, M. Uriarte, and P. Gentine (2018): Tall Amazonian forests are less sensitive to precipitation variability, *Nature Geoscience*, 11: 405-409.
29. Chaparro, D., M. Piles, M. Vall-llossera, A. Camps, **A.G. Konings**, and D. Entekhabi (2018): L-band vegetation optical depth seasonal metrics for crop yield assessment, *Remote Sensing of Environment*, 212:249-259.
28. Alemohammad, S.H., **A.G. Konings**, T. Jagdhuber, M. Moghaddam, and D. Entekhabi (2018). Characterization of vegetation and soil scattering mechanisms across different biomes using P-band SAR polarimetry. *Remote Sensing of Environment,* 209:107-117.
27. Kim, H., R. Parinussa, **A.G. Konings**, W. Wagner, M.H. Cosh, V. Lakshmi, M. Zohaib and M. Choi (2018). Global-scale assessment and combination of SMAP with ASCAT (active) and AMSR2 (passive) soil moisture products. *Remote Sensing of Environment*, 204: 260-275.
26. Momen, M., J.D. Wood, K. A. Novick, R. Pangle, W.T. Pockman, N.G. McDowell, and **A.G. Konings (**2017), Interacting effects of leaf water potential and biomass on vegetation optical depth, *Journal of Geophysical Research – Biogeosciences*, 122:3031-3046.
25. Li, Y., K. Guan, P. Gentine, **A.G. Konings**, F.C. Meinzer, J.S. Kimball, X. Xu, W.R.L. Anderegg, N.G. McDowell, J. Martinez-Vilalta, D.G. Long, and S.P. Good (2017). Estimating global ecosystem iso/anisohydry using active and passive microwave satellite data. *Journal of Geophysical Research – Biogeosciences:* 122:3306-3321.
24. S.H. Alemohammad, B. Fang, **A.G. Konings**, F. Aires, J.K. Green, J. Kolassa, D. Miralles, C. Prigent, and P. Gentine (2017). Water, Energy, and Carbon with Artifical

Neural Networks (WECANN): A statistically-based estimate of global surface turbulent fluxes using solar-induced fluorescence. *Biogeosciences*, 14:4101-4124.

23. **Konings, A.G**., M. Piles, N. Das, and D. Entekhabi (2017). L-band vegetation optical depth and effective scattering albedo estimation from SMAP. *Remote Sensing of Environment,* 198:460-470.
22. Rotzer, K, C. Montzka, D. Entekhabi, **A.G. Konings**, K.A. McColl, M. Piles, H. Vereecken (2017). Relationship between vegetation microwave optical depth and cross-polarized backscatter from multi-year Aquarius observations. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing,* 10(10): 4493-4503.
21. Green, J., **A.G. Konings**, S.H. Alemohammad, J. Berry, D. Entekhabi, J. Kolassa, J.-E. Lee, and P. Gentine (2017). Regionally strong feedbacks between the atmosphere and terrestrial biosphere. *Nature Geoscience*, 10:410-414.
20. **Konings, A.G.**, A.P. Williams, and P. Gentine (2017). Sensitivity of grassland productivity to aridity controlled by stomatal and xylem regulation. *Nature Geoscience,* 10:284-288.
19. **Konings, A.G.,** Y. Yu, L. Xu, Y. Yang, D.S. Schimel, and S.S. Saatchi (2017). Active microwave observations of diurnal and seasonal variations of canopy water content across the humid African tropical forests. *Geophysical Research Letters,* 44:2290-2299.
18. McColl, K.A., S.H. Alemohammad, R. Akbar, **A.G. Konings**, S.Yueh, and D. Entekhabi (2017). The global distribution and dynamics of surface soil moisture. *Nature Geoscience*, 10:100-104.
17. **Konings, A.G** and, P. Gentine (2017). Global variations in ecosystem-scale isohydricity. *Global Change Biology*, 23(2):891-905.
16. McColl K.A., A. Roy, C. Derksen, **A.G. Konings**, S.H. Alemohammad, and D. Entekhabi (2016). Triple collocation for binary and categorical variables: application to validating landscape freeze/thaw retrievals. *Remote Sensing of Environment,* 176:31-42.
15. **Konings, A.G.***, M. Piles*, K. Rötzer, K.A. McColl, S. Chan, and D. Entekhabi (2016). Vegetation optical depth and scattering albedo retrieval using time-series of dual-polarized L-band radiometer observations. *Remote Sensing of Environment.* 172:178-189.

N.B.: First two authors contributed equally to this paper

14. Bruscantini, C.A., **A.G. Konings**, P.S. Narvekar, K.A. McColl, D. Entekhabi, F. M. Grings, and H. Karszenbaum (2015). L-band radar soil moisture retrieval without ancillary information. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing,* 8(12): 5526-5540.
13. Alemohammad S.H., K.A. McColl, **A.G. Konings**, D. Entekhabi, and A. Stoffelen (2015). Characterization of precipitation product errors across the United States using multiplicative triple collocation. *Hydrology and Earth System Science,* 19: 3489-3503.
12. **Konings, A.G.,** K.A. McColl, M. Piles and D. Entekhabi (2015). How many parameters can be maximally estimated from a set of measurements? *IEEE Geoscience and Remote Sensing Letters,* 12(5):1081-1085.

11. McColl K.A., J. Vogelzang, **A.G. Konings**, D. Entekhabi, M. Piles and A. Stoffelen (2014). Extended triple collocation: estimating errors and correlation coefficients with respect to an unknown target. *Geophysical Research Letters*, 41:6229–6236.
10. **Konings A.G**., D. Entekhabi, M. Moghaddam and S.S. Saatchi (2014). The effect of variable soil moisture profiles on P-band backscatter. *IEEE Transactions on Geoscience and Remote Sensing,* 52(10):6315-6325.
9. **Konings A.G.,** X. Feng, A. Molini, S. Manzoni, G. Vico and A. Porporato (2012). Thermodynamics of an idealized hydrologic cycle. *Water Resources Research*, 48: W05527.
8. **Konings A.G.,** G.G. Katul and S.E. Thompson (2012). A phenomenological model for the flow resistance over submerged vegetation. *Water Resources Research,* 48: W02522.
7. Katul G.G., **A.G. Konings**, and A. Porporato (2011). Mean velocity profile in a sheared and thermally stratified atmospheric boundary layer. *Physical Review Letters,* 107: 268502.
6. **Konings, A.G**, S.C. Dekker, M. Rietkerk and G.G. Katul (2011). Drought sensitivity of patterned vegetation determined by rainfall-land surface feedbacks, *Journal of Geophysical Research-Biogeosciences*, 116: G04008.
5. Thompson, S., G. Katul, **A. Konings** and L. Ridolfi (2011). Unsteady overland flow on flat surfaces induced by spatial permeability contrasts. *Advances in Water Resources,* 34:1049-1058.
4. Thompson, S.E., C.J. Harman, **A.G. Konings**, M. Sivapalan, A. Neal and P. A. Troch (2011). Comparative hydrology across AmeriFlux sites: the variable roles of climate, vegetation, and groundwater. *Water Resources Research,* 47:W00J07.
3. **Konings A.G**., D. Entekhabi, S.K. Chan and E.G. Njoku (2011), Effect of radiative transfer uncertainty on L-band radiometric soil moisture retrieval. *IEEE Transactions on Geoscience and Remote Sensing*, 49(7):2686-2698.
2. **Konings, A.G.,** G.G. Katul, and A. Porporato (2010). The rainfall-no rainfall transition in a coupled land-convective atmosphere system, *Geophysical Research Letters*, 37: L14401.
1. Wójcik R., D. McLaughin, **A.G. Konings**, and D. Entekhabi (2009). Conditioning stochastic rainfall replicates on remote sensing data. *IEEE Transactions on Geoscience and Remote Sensing,* 47(8): 2436-2449*.*

PEER-REVIEWED CONFERENCE PUBLICATIONS

1. Rao K., Y.J. Ulloa, N. Bienert, N.R. Chiarello, N.M. Holtzman, G.R. Quetin, S.T. Peters, K. Winstein, D. Castelletti, D.M. Schroeder, and **A.G. Konings** (2022). Side-Facing UHF-Band Radar System to Monitor Tree Water Status, *Proceedings of the International Geoscience and Remote Sensing Symposium (IGARSS).*

INVITED SEMINARS AND INVITED CONFERENCE PRESENTATIONS

05/2024 Carnegie Institution for Science, Dept. of Global Ecology
12/2023 American Geophysical Union Fall Meeting
04/2023 Massachusetts Institute of Technology, Civil and Environmental Engineering
03/2023 Forschungszentrum Jülich, IBG-3
12/2022 American Geophysical Union Fall Meeting
10/2022 St. Anthony Falls Laboratory, University of Minnesota
06/2022 Continental Climate Change Workshop
12/2021 American Geophysical Union Fall Meeting
11/2021 Department of Energy, AI for Earth System Predictability Workshop
11/2021 University of California, Irvine, Department of Earth System Science
10/2021 American Geophysical Union Global Environmental Change Section
10/2021 University of Maryland Earth System Science Interdisciplinary Center
05/2021 New Advances in Land Carbon Cycle Modeling Course
05/2021 University of California, Santa Barbara, Climate Seminar Series
12/2020 American Geophysical Union Fall Meeting
08/2020 Ecological Society of America Annual Meeting
05/2020 European Geophysical Union Annual Meeting
05/2020 Jet Propulsion Laboratory, Center for Climate Science
12/2019 American Geophysical Union Fall Meeting
05/2019 Princeton University, Department of Civil and Environmental Engineering
04/2019 Lawrence Berkeley National Laboratory
04/2019 Carnegie Institution for Science, Dept. of Global Ecology
01/2019 American Meteorological Society Annual Meeting, Inez Fung Symposium, panelist
11/2018 University of Saskatchewan, Global Institute for Water Security
08/2018 Ecological Society of America Annual Meeting
05/2018 Harvard University, Dept. of Earth and Planetary Sciences
04/2018 University of California, Berkeley, Dept. of Geography
03/2018 University of Utah, Dept. of Biology
02/2018 University of California, Los Angeles, Dept. of Ecology and Evolution
01/2018 American Meteorological Society Annual Meeting
12/2017 American Geophysical Union Fall Meeting
09/2017 NASA Goddard Space Flight Center, Global Modelling and Assimilation Office
05/2017 Carnegie Institution for Science, Dept. of Global Ecology
12/2016 American Geophysical Union Fall Meeting
12/2016 University of California, Berkeley, Dept. of Civil and Environmental Eng.
10/2016 Boston University, Dept. of Earth and Environment
10/2016 Stanford University, Dept. of Geophysics
07/2016 NASA Jet Propulsion Laboratory, Carbon Cycle & Ecosystems Group
06/2016 Gordon Research Conference on Multiscale Vascular Plant Biology
05/2015 Tsinghua University, Center for Earth System Science
04/2015 The Ohio State University, Dept. of Civil, Environmental, and Geodetic Eng.
03/2015 Columbia University, Dept. of Earth and Environmental Engineering
03/2015 Stanford University, Dept. of Earth System Science
06/2011 Utrecht University, Dept. of Environmental Sciences
07/2010 Istituto Veneto di Scienze, Lettere, ed Arti, Summer School on

Biogeodynamics and Earth System Science

TEACHING

Main or co-instructor

ESS 224 Remote Sensing of Hydrology (Spring 2018-2023, Winter 2024)
ESS 223 Biosphere-Atmosphere Interactions (Fall 2017, Winter 2019-Winter 2021, Winter 2023-2024)
COL 102 Citizenship in the 21st Century (Winter 2022)

Guest lecture

EARTH1B: Know Your Planet: Big Earth (Winter 2022)
ESS 102/202: The Scientific Basis of Climate Change (Spring 2021-2022, 2024)
ESS 171/271: Climate Models and Data (Winter 2021-2022)
GP 101/201: Frontiers of Geophysical Research at Stanford (Fall 2019, 2021, 2022)
EARTHSYS 291: Concepts in Environmental Communication (Fall 2019)
ENVRES 330 Research Approaches for Environmental Problem Solving (Spring 2017)
ESS 305 Climate Change: An Earth Systems Perspective (Fall 2017-2023)
ESS 306 From Freshwater to Oceans to Land Systems: An Earth System Perspective to Global Challenges (Winter 2024)
EARTHSYS 10 Introduction to Earth Systems (Fall 2017-2018, 2020-2023)
Stanford Undergraduate Research in Geoscience and Engineering Program (Summer 2018-2020)

Teaching Assistant

MIT 1.070 Introduction to Hydrology (Fall 2013)
Summer school on Biogeodynamics and Earth System Science (June 2010)
MIT Chi Epsilon Matlab Tutorial (Spring 2009)

Workshop Organization

Software Carpentry Scientific Programming Workshop at MIT CEE (2013)

RESEARCH MENTORSHIP

Postdoctoral Scholars

10/2023 – present Marvin Browne
08/2023 – present Dapeng Feng
07/2021 - 12/2022 Meng Zhao, now Assistant Professor at University of Idaho
07/2019 - 09/2020 Yanlan Liu, now Assistant Professor at The Ohio State University
02/2018 - 12/2020 Gregory Quetin, now Research Scientist at UC Santa Barbara
02/2017 - 01/2018 Mostafa Momen, now Assistant Professor at University of Houston

PhD Students

2022 – present Erica McCormick
2021 - present Trent Robinett

2020 - present Matthew Worden
2018 - 2024 Natan Holtzman
2018 - 2023 Caroline Famiglietti
2018 – 2022 Krishna Rao
2016 - 2022 Nathan Dadap

MS and Coterminal MS Students

2024 - present Emil Biju
2024 - present Andy Huynh
2021 - 2022 Olivia Flournoy
2021 Xinle (Grace) Yao
2018 Jacqueline Fortin Flefil
2017 Krishna Rao
2017 Christopher Jansen

Undergraduate Students

2023 – present Lillian Sanders (Stanford)
2023 – present Joshua Bruns (Williams College)
2023 Sabrina Ahmed (Stanford)
2022 - 2023 Jevan Yu (Stanford, co-advised with Alison Hoyt)
2022 Mckenzie Swindle (East Carolina University)
2021 - 2023 Paula Rueda Villamil (UC Berkeley)
2021 Iris Xia (Stanford)
2020 - 2021 Uma Dayal (Stanford)
2019 - 2021 Olivia Flournoy (Stanford)
2018 - 2019 Michael Burnett (Stanford)
2018 - 2019 Yesenia Ulloa (Stanford)
2018 Guadalupe Rodrigues Alvarez (UT - El Paso)

Geophysics Second-Project Students

2018 Aakash Ahamed

Visiting High School Teacher

2021 Shannon Mueller

Honors Awarded to Mentored Trainees

2023 Trent Robinett, NSF Graduate Research Fellowship Honorable Mention
2022 Krishna Rao, Stanford ESS Graduate Student Award for Scholarly/Research Achievement
2022 Meng Zhao, Stanford Earth Outstanding Achievement in Mentoring
2021 Olivia Flournoy, Best Undergraduate Thesis in Stanford Geophysics
2021 Caroline Famiglietti, Stanford Earth Outstanding Achievement in Mentoring
2021 - 2023 Caroline Famiglietti, NASA FINESST Fellowship
2021 - 2023 Caroline Famiglietti, ARCS Award, ARCS Foundation
2020 - 2022 Krishna Rao, Stanford Data Science Scholar
2020 - 2023 Natan Holtzman, NASA FINESST Fellowship

2019 Krishna Rao, Google Geo for Good Summit "Highly Inquisitive Award"
2019 Michael Burnett, Stanford Earth Outstanding Achievement in Mentoring
2019 Krishna Rao, Stanford Earth Outstanding Achievement in Mentoring
2019 Nathan Dadap, Stanford Earth Outstanding Achievement in Mentoring
2018 - 2021 Krishna Rao, NASA Earth and Space Science Fellowship
2018 - 2021 Nathan Dadap, NASA Earth and Space Science Fellowship
2018 - 2021 Caroline Famiglietti, Stanford Graduate Fellowship

PhD Committee Member

Current Angela Tsao, Stanford Earth System Science
Current Elizabeth Wig, Stanford Electrical Engineering
Current Jared Trok, Stanford Earth System Science
Current Ankun Wang, Stanford Earth System Science
Current Kelsey Foster, Stanford Earth System Science
Current Anam Khan, University of Wisconsin Forest and Wildlife Ecology
2023 Conor Doherty, Stanford CEE
2022 Aakash Ahamed, Stanford Geophysics
2021 Tristan Ballard, Stanford Earth System Science
2021 Shersingh Tumbler-Dávila, Stanford Earth System Science
2021 Andrew Feldman, MIT CEE
2020 Roger Michaelides, Stanford Geophysics
2019 Emily Francis, Stanford Earth System Science
2018 Jordanna Deane, Stanford CEE

PhD Committee Chair and/or Oral Committee

2023 Ali Kashefi, Stanford CEE
2022 Irene Teubner, TU Vienna Geodesy and Geoinformation
2021 Alexander Kendrick, Stanford Geophysics
2021 Emma McKee, Stanford Geophysics
2021 Sherrie Wang, Stanford ICME
2021 Noah Dewar, Stanford Geophysics
2020 Rachel Engstrand, Stanford EIPER
2019 Yijie Zheng, Stanford Geophysics
2018 Ryan Smith, Stanford Geophysics
2018 Yoichi Shiga, Stanford CEE

ACADEMIC ADVISING

Stanford Earth Systems Academic Advisor

2020 - 2021 Lilla Petruska
2020 - 2021 Mireille Vargas

STANFORD UNIVERSITY SERVICE

- Stanford Teagle Fellow in Liberal Education (2022-2023)
- Doerr School of Sustainability Discovery Grants Reviewer (2023)
- Doerr School of Sustainability "Freshwater" Faculty Search Committee (2023-2024)
- Doerr School of Sustainability "Taking the Pulse of the Planet" Faculty Search Committee (2023)
- Stanford Interdisciplinary Graduate Fellowship Selection Committee (2021-2023)
- Woods Institute Environmental Ventures Projects Selection Committee (2019-2020)
- 'Postdoc Academic Chats' Panelist (2018)
- Long-Range Planning Committee on Faculty Affordability (2018-2019)
- Price Chair in Hydrology and Water Resources Faculty Search Committee (2018-2019)
- Jasper Ridge Biological Preserve Faculty Advisory Committee (2017-2019)

- Earth System Science Director of Graduate Studies (Fall 2023-present)
- Earth System Science Departmental Seminar Organizer (Spring Quarter 2017, 2022-2023)
- Earth System Science Appointment Committee for senior faculty member (2022)
- Earth System Science Appointment Committee for two junior faculty members (2021)
- Earth System Science Graduate Admissions Committee (Fall 2016-Spring 2018, Fall 2019-Spring 2021)
- Earth System Science Diversity Committee (2018)

OUTREACH

07/2022	Panelist, California Natural Resources Agency Webinar
04/2022	Speaker, Rural West Conference

PROFESSIONAL SERVICE

Leadership and service

- Member, AGU Peter S. Eagleson Hydrologic Sciences Award committee (2024 – present)
- Member, NRC Committee on Earth Science and Applications from Space (2023 – present)
- Co-convener, AGU Fall Meeting 2021 and 2022 sessions on "Advances in Carbon Cycle Modelling"
- Co-convener and primary convener, AGU Fall Meeting 2019-2021 sessions on "Complexity and Emergent Behavior in the Terrestrial Carbon Cycle"
- Co-Chair, Keck Institute for Space Studies Workshop on "Sensing Forest Water Dynamics from Space: Towards Predicting the Earth System Response to Droughts" (October 2019 & October 2020)
- Program committee member, AGU Chapman Conference on "Understanding Carbon-Climate Feedbacks" (August 2019)

- Co-convener, IEEE Geoscience and Remote Sensing Session on “New Products and Results in Monitoring Biomass and Plant Water Stress with Microwave Radiometry” (July 2019)
- Co-convener, AGU Fall Meeting 2018 session “Emergent Behavior in the Terrestrial Carbon Cycle”
- Primary convener, AGU Fall Meeting 2018 session “Understanding the Role of Plant Hydraulics Across Scales”
- Primary convener, AGU Fall Meeting 2017 session on “Emerging technologies in hydrologic remote sensing: drones, proximal sensing using neutron probes, and more”
- Member, Remote Sensing Technical Committee, American Geophysical Union Hydrology Section, 2016-2023
- Co-organizer, JPL workshop on Applications of GNSS-R to Cold Land Processes and Surface Hydrology, August 2016
- Outstanding Student Paper Award judge, American Geophysical Union 2016-present

Reviewer and Editor

- Panelist, NASA Senior Mission Review (2023)
- Associate Editor, Biogeosciences (2020-2023)
- Associate Editor, Frontiers in Big Data, Data-Driven Climate Sciences section (2019)
- Ad Hoc Journal Reviews: *Advances in Water Resources*, *AGU Books*, *Earth Surface Processes and Landforms, Earth System Science Data, Ecological Applications, Geophysical Research Letters*, *Global Change Biology, IEEE Geoscience and Remote Sensing Letters, Journal of Advances in Modeling Earth Systems, Journal of Geophysical Research – Biogeosciences, Journal of Hydrometeorology, Hydrological Processes*, *Hydrology and Earth System Sciences*, *Nature, Nature Communications, Nature Ecology and Evolution, Nature Geoscience, New Phytologist, Proceedings of the National Academy of Sciences, Remote Sensing*, *Remote Sensing of Environment*, *Science, Science Advances,* and *Water Resources Research*.
- Conferences: *IEEE Geoscience and Remote Sensing Symposium*
- Proposals: NASA Terrestrial Ecology (panel), NASA Terrestrial Hydrology (panel), NOAA Modeling, Analysis, Predictions and Projections (panel), Belgian Science Policy Office (ad hoc), European Research Council (ad hoc), NSF Geography and Spatial Sciences (ad hoc), NSF Ecosystem Sciences (ad hoc), NSF Hydrologic Sciences (ad hoc), National Academy of Sciences (ad hoc)

PROFESSIONAL AFFILIATIONS

American Association for the Advancement of Science, American Geophysical Union, Ecological Society of America, American Meteorological Society, IEEE Geoscience and Remote Sensing Society, Chi Epsilon Civil Engineering Honors Society