DEBORA YUMI DE OLIVEIRA

debora.ydo@gmail.com
deboraydo.github.io

EDUCATION

Ph.D. in Civil and Environmental Engineering December 2022 (expected)
University of California, Irvine (UCI), United States

- Advisor: Dr. Jasper Alexander Vrugt
- GPA: 4.00/4.00

Master in Environmental Engineering March 2018
Federal University of Santa Catarina (UFSC), Brazil

- Thesis title: Bayesian inference applied to interception and rainfall-runoff modeling
- Advisor: Dr. Pedro Luiz Borges Chaffe
- GPA: 10.00/10.00

Sanitary and Environmental Engineering September 2016
Federal University of Santa Catarina (UFSC), Brazil

- Thesis title: Identification of interception model parameters using an automatic calibration algorithm
- Advisor: Dr. Pedro Luiz Borges Chaffe
- GPA: 9.03/10.00

RESEARCH EXPERIENCE

Graduate Research Fellow January 2019 – present
University of California, Irvine (UCI), United States

Graduate Student Researcher March 2016 – August 2018
Federal University of Santa Catarina (UFSC), Brazil

- Main research project: Bayesian inference applied to interception and rainfall-runoff modeling
- Involvement in a variety of research projects related to hydrologic modeling, flood analysis, and field-based studies on subtropical forested catchments
- Research conducted during this period resulted in 5 peer-reviewed publications, 11 conference papers, and 8 conference abstracts

Undergraduate Research Assistant September 2014 – March 2016
Federal University of Santa Catarina (UFSC), Brazil

- Main research project: Identification of interception model parameters using an automatic calibration algorithm
- Research conducted during this period resulted in 1 peer-reviewed publication and 2 conference papers

AWARDS AND SCHOLARSHIPS

Outstanding Reviewer Award 2021 2022

- Awarded by the American Geophysical Union (AGU)
- AGU 2021 Editors' Citation for Excellence in Refereeing for Water Resources Research

Miguel Velez Scholarship 2022

· Awarded by the University of California, Irvine (UCI), Graduate Division
· 1 quarter of tuition/stipends ($13,000)

CAPES Fellowship 2018

· Awarded by the Ministry of Education of Brazil
· 3.5 years of tuition/stipends (∼$160,000)

Young Researcher Award 2017

· Awarded by the Brazilian Water Resources Association (ABRHidro)

Medal for Academic Excellence 2015

· Awarded by the Federal University of Santa Catarina (UFSC)
· Top graduating student in Sanitary and Environmental Engineering

BRAFITEC Scholarship 2011

· Awarded by the Ministry of Education of Brazil
· 1 year of tuition/stipends (∼$20,000)
· International exchange program between Brazil and France for engineering students

PUBLICATIONS

In progress

1. **de Oliveira**, D. Y. & Vrugt, J. A. Diagnostic Bayes: Merging the strengths of Bayesian inference and diagnostic model evaluation. *In preparation.*
2. **de Oliveira**, D. Y. & Vrugt, J. A. The Treatment of Uncertainty in Diagnostic Model Evaluation: A Probabilistic Description of Hydrologic Signatures. *Submitted (in revision).*
3. **de Oliveira**, D. Y. & Vrugt, J. A. The Treatment of Uncertainty in Diagnostic Model Evaluation: A Probabilistic Description of Streamflow Records. *Submitted (in revision).*
4. Vrugt, J. A., **de Oliveira**, D. Y., Schoups, G. & Diks, C. G. H. On the use of distribution-free likelihood functions: Generalized and universal likelihood functions, score rules and multi-criteria ranking. *Submitted (in revision).*

Journal publications

1. David, P. C., Chaffe, P. L. B., Chagas, V. B. P., Dal Molin, M., **de Oliveira**, D. Y., Klein, A. H. F. & Fenicia, F. Correspondence Between Model Structures and Hydrological Signatures: A Large-Sample Case Study Using 508 Brazilian Catchments. *Water Resources Research* **58,** e2021WR030619. doi:https://doi.org/10.1029/2021WR030619 (2022).
2. Vrugt, J. A. & **de Oliveira**, D. Y. Confidence intervals of the Kling-Gupta efficiency. *Journal of Hydrology* **612,** 127968. ISSN: 0022-1694. doi:https://doi.org/10.1016/j.jhydrol.2022.127968 (2022).
3. Franco, A. C. L., **de Oliveira**, D. Y. & Bonumá, N. B. Comparison of single-site, multi-site and multi-variable SWAT calibration strategies. *Hydrological Sciences Journal* **65,** 2376–2389. doi:10.1080/02626667.2020.1810252 (2020).

4. Paiva, R. C. D., Chaffe, P. L. B., Anache, J. A. A., Fontes, A. S., Araujo, L. M. N., Araujo, A. N., Bartiko, D., Bleninger, T., Amorim, P. B., Buarque, D. C., Carlotto, T., Collischonn, W., Detzel, D. H. M., Fan, F. M., Formiga-Johnsson, R. M., Kobiyama, M., Mannich, M., Marques, G., Michel, G. P., **de Oliveira**, D. Y., de Oliveira, P. T. S., Pinheiro, A., Ruhoff, A., Siqueira, V. A., Tassi, R. & Zanandrea, F. Advances and challenges in the water sciences in Brazil: a community synthesis of the XXIII Brazilian Water Resources Symposium. *Brazilian Journal of Water Resources* **25,** e50. ISSN: 2318-0331. doi:10.1590/2318-0331.252020200136 (2020).

5. Bartiko, D., **de Oliveira**, D. Y., Bonumá, N. B. & Chaffe, P. L. B. Spatial and seasonal patterns of flood change across Brazil. *Hydrological Sciences Journal* **64,** 1071–1079. doi:10.1080/02626667.2019.1619081 (2019).

6. David, P. C., **de Oliveira**, D. Y., Grison, F., Kobiyama, M. & Chaffe, P. L. B. Systematic increase in model complexity helps to identify dominant streamflow mechanisms in two small forested basins. *Hydrological Sciences Journal* **64,** 455–472. doi:10.1080/02626667.2019.1585858 (2019).

7. **de Oliveira**, D. Y., Chaffe, P. L. B. & Sá, J. H. M. Extending the Applicability of the Generalized Likelihood Function for Zero-Inflated Data Series. *Water Resources Research* **54,** 2494–2506. doi:https://doi.org/10.1002/2017WR021560 (2018).

8. Sá, J. H. M., Chaffe, P. L. B. & **de Oliveira**, D. Y. A comparative analysis of the Gash and the Rutter models for the estimation of rainfall interception by Mixed Ombrophilous Forest. *Brazilian Journal of Water Resources* **20,** 1008–1018. ISSN: 2318-0331. doi:10.21168/rbrh.v20n4.p1008-1018 (2015).

TEACHING EXPERIENCE

Teaching assistant Fall 2020
University of California, Irvine (UCI), United States

· Course: CEE20 "Introduction to Computational Engineering Problem Solving", undergraduate level

Instructor 2019
Federal University of Paraná (UFPR), Brazil

· Short course on "Fundamentals of Hydrological Modeling" (12 hours), 20 participants.

Instructor 2019
XXIII Brazilian Symposium on Water Resources, Brazil

· Short course on "Fundamentals of Hydrological Modeling" (8 hours), 30 participants.

Instructor 2017
XXII Brazilian Symposium on Water Resources, Brazil

· Short course on "Bayesian Analysis applied to Hydrology" (6 hours), 15 participants.

Instructor 2016
Federal University of Santa Catarina (UFSC), Brazil

· Short course on "Introduction to MATLAB" (8 hours), 15 participants.

Teaching assistant 2016 – 2017
Federal University of Santa Catarina (UFSC), Brazil

· Course: "Hydrology and Climatology", undergraduate level
· One to three lectures per semester (interception, runoff generation mechanisms, introduction to hydrological modeling)

Teaching assistant 2016 – 2017
Federal University of Santa Catarina (UFSC), Brazil

· Course: "Water Resources Planning", undergraduate level
· One lecture per semester (reservoir management lab session)

MENTORSHIP EXPERIENCE

Co-advisor 2019
Federal University of Santa Catarina (UFSC), Brazil

· Gabriel Anzolin, "Estimation of rainfall intensity-duration-frequency curves in Southern Brazil using stationary and nonstationary models", Bachelor thesis, Federal University of Santa Catarina, Brazil.

Co-advisor 2017
Federal University of Santa Catarina (UFSC), Brazil

· Paula Cunha David, "Influence of conceptual model structure on the rainfall-runoff simulation in two forested catchments", Bachelor thesis, Federal University of Santa Catarina, Brazil.

PROFESSIONAL SERVICE

Selection committee 2021
Young Researcher Award, XXIV Brazilian Symposium on Water Resources, Brazil

Co-convener 2019
XXIII Brazilian Symposium on Water Resources, Brazil

· Special session on "Hydrological models as hypothesis of catchment functioning"

Journal reviewer

· Water Resources Research
· Brazilian Journal of Water Resources
· Revista de Gestão de Água da América Latina (in Portuguese)

TRAINING

Machine Learning in Python for Environmental Science Problems January 2022
American Meteorological Society (AMS), United States

Introduction to the WRF-Hydro Modeling System February 2021
American Meteorological Society (AMS), United States

MGB-IPH Large-Scale Hydrological Model August – September 2020
Institute of Hydraulic Research (IPH/UFRGS), Brazil

Model building, inference and hypothesis testing in hydrology April 2016
American Meteorological Society (AMS), United States

Basic SWAT course: Sediment modeling August 2015
Federal University of Santa Catarina (UFSC), Brazil

Basic SWAT course: Hydrologic modeling December 2014
Federal University of Santa Catarina (UFSC), Brazil