

DEBORA YUMI DE OLIVEIRA

debora.ydo@gmail.com

deboraydo.github.io

EDUCATION

Ph.D. in Civil and Environmental Engineering

University of California, Irvine (UCI)

December 2022 (expected)

Irvine, United States

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

Master in Environmental Engineering

Federal University of Santa Catarina (UFSC)

March 2018

Florianópolis, 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

Federal University of Santa Catarina (UFSC)

September 2015

Florianópolis, 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 Researcher

University of California, Irvine (UCI)

January 2019 – present

Irvine, United States

Graduate Researcher

Federal University of Santa Catarina (UFSC)

March 2016 – August 2018

Florianópolis, 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

Federal University of Santa Catarina (UFSC)

September 2014 – March 2016

Florianópolis, 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

Spring 2022

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

CAPES Fellowship

January 2019 – June 2022

- 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

January 2011 – December 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

University of California, Irvine (UCI)

Fall 2020

Irvine, United States

- Course: CEE20 “Introduction to Computational Engineering Problem Solving”, undergraduate level

Teaching assistant

Federal University of Santa Catarina (UFSC)

2016 – 2017

Florianópolis, Brazil

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

Teaching assistant

Federal University of Santa Catarina (UFSC)

2016 – 2017

Florianópolis, Brazil

- Course: “Water Resources Planning”, undergraduate level
- One lecture per semester (reservoir management lab session)

Instructor

- Short course on “Fundamentals of Hydrological Modeling” (12 hours), Federal University of Paraná (UFPR), Brazil. Participants: 20. November 19-20, 2019. Curitiba, Brazil.
- Short course on “Fundamentals of Hydrological Modeling” (8 hours), XXIII Brazilian Symposium on Water Resources, Brazil. Participants: 30. November 24, 2019. Foz do Iguaçu, Brazil.
- Short course on “Bayesian Analysis applied to Hydrology” (6 hours), XXII Brazilian Symposium on Water Resources, Brazil. Participants: 15. November 28-30, 2017. Florianópolis, Brazil.

- Short course on “Introduction to MATLAB” (8 hours) for undergraduates in Environmental and Sanitary Engineering, Federal University of Santa Catarina (UFSC), Brazil. Participants: 15. March 29-April 01, 2016. Florianópolis, Brazil.

MENTORSHIP EXPERIENCE

Co-advisor 2019

- 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

- 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