# DEBORA YUMI DE OLIVEIRA

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## EDUCATION

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

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

**Master in Environmental Engineering** March 2018
*Federal University of Santa Catarina (UFSC)* *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** September 2015
*Federal University of Santa Catarina (UFSC)* *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

## 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** Fall 2020
*University of California, Irvine (UCI)* *Irvine, United States*

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

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