

ORCID: [0000-0003-3635-3249](https://orcid.org/0000-0003-3635-3249)

Email: [debora.ydo@gmail.com](mailto:debora.ydo@gmail.com)

Website: [deboraydo.github.io](https://deboraydo.github.io)

## Education

- 2019–2023 **University of California, Irvine** | Irvine, USA  
*Ph.D., Civil and Environmental Engineering*  
Focus area: Hydrology and Water Resources  
Dissertation: [Statistical underpinning of process-based diagnostics of hydrologic models](#)  
Advisor: Prof. Jasper Alexander Vrugt
- 2016–2018 **Universidade Federal de Santa Catarina** | Florianópolis, Brazil  
*Master's degree, Environmental Engineering*  
Focus area: Hydrology and Applied Hydraulics  
Thesis: [Bayesian inference applied to interception and rainfall-runoff modeling](#)  
Advisor: Prof. Pedro Luiz Borges Chaffe
- 2010–2015 **Universidade Federal de Santa Catarina** | Florianópolis, Brazil  
*Bachelor's degree, Sanitary and Environmental Engineering*  
Thesis: [Identification of interception model parameters using an automatic calibration algorithm](#)  
Advisor: Prof. Pedro Luiz Borges Chaffe
- 2012–2013 **École Nationale Supérieure de Géologie** | Nancy, France  
*BRAFITEC (Brasil France Ingénieurs Technologie) Exchange Program*  
Focus area: Water Resources/Hydrogeology

## Academic Appointments

- 2025–on **Universidade Presbiteriana Mackenzie** | São Paulo, Brazil  
*Assistant Professor*  
School of Engineering
- 2023–2025 **University of California, Irvine** | Irvine, USA  
*Postdoctoral Scholar*  
Department of Civil and Environmental Engineering  
Supervisor: Prof. Amir AghaKouchak  
Focus: Climate Extremes
- Analyzed the impacts of climate change on compound and cascading events in California as part of the upcoming [California's Fifth Climate Change Assessment](#)
  - Co-developed a comprehensive approach for assessing global-scale vulnerability to droughts as part of the [AccelNet: PEER2PEER International Convergence Research Networks in Transboundary Water Security](#) project
  - Analyzed projected changes in US coastal floods by accounting for the compounding effects of river floods and location-specific relative sea level projections updated using spatially variable vertical land motion estimates
- 2019–2023 **University of California, Irvine** | Irvine, USA  
*Graduate Student Researcher*  
Department of Civil and Environmental Engineering  
Supervisor: Prof. Jasper Alexander Vrugt  
Focus: Diagnostics of Hydrologic Models
- Developed a model-agnostic method for the generation of replicates of discharge records
  - Developed methods for the characterization of the uncertainty of hydrologic signatures and the selection of robust signature formulations for process-based diagnostics of hydrologic models
  - Evaluated the use of different Bayesian methods for process-based diagnostics of hydrologic models
  - Developed a general-purpose MATLAB modeling package for process-based hydrologic modeling

2014–2018 **Universidade Federal de Santa Catarina** | Florianópolis, Brazil

*Research Assistant*

Department of Sanitary and Environmental Engineering

Supervisor: Prof. Pedro Luiz Borges Chaffe

Focus: Hydrologic Modeling and Uncertainty Analysis

- Implemented multiple conceptual hydrologic models in MATLAB to investigate the influence of the explicit representation of the interception process in rainfall-runoff modeling while accounting for uncertainties using Bayesian inference
- Collaborated in the analysis of changes in the magnitude and frequency of floods in Brazil
- Participated in field-based studies in subtropical forested catchments to collect interception, rainfall, and discharge data

## Teaching Experience

---

02/25–on **Universidade Presbiteriana Mackenzie** | São Paulo, Brazil

*Assistant Professor*

Fenômenos de Transporte I

Hidráulica I

Hidráulica II

09–11/23 **California State University, Long Beach** | Long Beach, USA

*Temporary Lecturer*

CE 437. Engineering Hydraulics

01–03/23 **University of California, Irvine** | Irvine, USA

*Teaching Assistant*

ENGRCEE 171. Water Resources Engineering

09–12/22 **University of California, Irvine** | Irvine, USA

*Teaching Assistant*

ENGRCEE 20. Introduction to Computational Engineering Problem Solving

09–12/20 **University of California, Irvine** | Irvine, USA

*Teaching Assistant*

ENGRCEE 20. Introduction to Computational Engineering Problem Solving

### **Short course instructor**

[Google Earth Engine](#) (4 hours) | University of Dar es Salaam, Tanzania

Fundamentals of Hydrological Modeling (12 hours) | Universidade Federal do Paraná

Fundamentals of Hydrological Modeling (8 hours) | XXIII Brazilian Symposium on Water Resources

Bayesian Analysis applied to Hydrology (6 hours) | XXII Brazilian Symposium on Water Resources

Introduction to MATLAB (8 hours) | Universidade Federal de Santa Catarina

## Honors and Awards

---

2022 **[AGU 2021 Editors' Citation for Excellence in Refereeing for Water Resources Research](#)**

American Geophysical Union

2017 **[Prêmio Jovem Pesquisador](#)**

Brazilian Water Resources Association (ABRHidro)

2015 **Medal for Academic Excellence (top graduating student in the department)**

Universidade Federal de Santa Catarina

## Service to the Community

---

### **Journal reviewer**

Nature

Hydrology and Earth System Sciences

Water Resources Research

Brazilian Journal of Water Resources

Revista de Gestão de Água da América Latina

## Referred Journal Publications

---

- 2025 AghaKouchak, A, et al. including [de Oliveira, DY](#). Building urban fire resilience to enhance national security. *Nature Cities*. doi:[10.1038/s44284-025-00296-w](#).
- 2024 Huning, LS, et al. including [de Oliveira, DY](#). Sustainability nexus analytics, informatics, and data (AID): Drought. *Sustainability Nexus Forum*. doi:[10.1007/s00550-024-00546-w](#).
- Anzolin, G, [de Oliveira, DY](#), Vrugt, JA, AghaKouchak, A, Chaffe, PLB. Nonstationary frequency analysis of extreme precipitation: Embracing trends in observations. *Journal of Hydrology*. doi:[10.1016/j.jhydrol.2024.131300](#).
- [de Oliveira, DY](#), Vrugt, JA. Reply to Comment by W. Knoben and M. Clark on The Treatment of Uncertainty in Hydrometric Observations: A Probabilistic Description of Streamflow Records. *Water Resources Research*. doi:[10.1029/2023WR036550](#).
- 2022 Vrugt, JA, [de Oliveira, DY](#), Schoups, G, Diks, CGH. On the use of distribution-adaptive likelihood functions: Generalized and universal likelihood functions, scoring rules and multi-criteria ranking. *Journal of Hydrology*. doi:[10.1016/j.jhydrol.2022.128542](#).
- [de Oliveira, DY](#), Vrugt, JA. The Treatment of Uncertainty in Hydrometric Observations: A Probabilistic Description of Streamflow Records. *Water Resources Research*. doi:[10.1029/2022WR032263](#).
- Vrugt, JA, [de Oliveira, DY](#). Confidence intervals of the Kling-Gupta efficiency. *Journal of Hydrology*. doi:[10.1016/j.jhydrol.2022.127968](#).
- David, PC, Chaffe, PLB, Chagas, VBP, dal Molin, M, [de Oliveira, DY](#), Klein, AHF, Fenicia, F. Correspondence Between Model Structures and Hydrological Signatures: A Large-Sample Case Study Using 508 Brazilian Catchments. *Water Resources Research*. doi:[10.1029/2021WR030619](#).
- 2020 Paiva, RCD, et al. including [de Oliveira, DY](#). Advances and challenges in the water sciences in Brazil: a community synthesis of the XXIII Brazilian Water Resources Symposium. *Revista Brasileira de Recursos Hídricos*, doi:[10.1590/2318-0331.252020200136](#).
- Franco, ACL, [de Oliveira, DY](#), Bonumá, NB. Comparison of single-site, multi-site and multi-variable SWAT calibration strategies. *Hydrological Sciences Journal*. doi:[10.1080/02626667.2020.1810252](#).
- 2019 Bartiko, D, [de Oliveira, DY](#), Bonumá, NB, Chaffe, PLB. Spatial and seasonal patterns of flood change across Brazil. *Hydrological Sciences Journal*, doi:[10.1080/02626667.2019.1619081](#).
- David, PC, [de Oliveira, DY](#), Grison, F, Kobiyama, M, Chaffe, PLB. Systematic increase in model complexity helps to identify dominant streamflow mechanisms in two small forested basins. *Hydrological Sciences Journal*. doi:[10.1080/02626667.2019.1585858](#).
- 2018 [de Oliveira, DY](#), Chaffe, PLB, Sá, JHM. Extending the Applicability of the Generalized Likelihood Function for Zero-Inflated Data Series. *Water Resources Research*. doi:[10.1002/2017WR021560](#).
- 2015 Sá, JHM, Chaffe, PLB, [de Oliveira, DY](#). Análise comparativa dos modelos de Gash e de Rutter para a estimativa da interceptação por floresta ombrófila mista. *Revista Brasileira de Recursos Hídricos*. doi:[10.21168/rbrh.v20n4.p1008-1018](#).

## Languages

---

Portuguese as native language  
Fluent English  
Advanced French