Diego A. Casas

diegocasas.net

Research interests

- Coastal hydrodynamics: wave-current interaction and wave transformation
- Transport and mixing processes: plumes, ocean outfalls, sediment transport and pollutant dispersion
- Wave climate: analysis of metocean data, extreme wave conditions and wave spectra

Education

Expected 2026 **Ph.D. in Water Resources and Environmental Engineering**, *Federal University of Paraná (UFPR)*, Brazil.
Supervisor: Prof. Dr.-Ing. Tobias Bleninger

2023 **M.Sc. in Water Resources and Environmental Engineering**, *Federal University of Paraná (UFPR)*, Brazil.
Dissertation: "Influence of waves on the transport and fate of sediments from a submarine sewage outfall in shallow coastal waters"
Supervisor: Prof. Dr.-Ing. Tobias Bleninger

2020 **B.Sc. in Civil Engineering**, *Universidad del Norte*, Colombia.

Professional experience

2021–2022 **Course instructor**, *Universidad del Magdalena*, Colombia.
Course: "Computational Modeling in Coastal Engineering"

2020–2021 **Design engineer**, *ATE Hydrosystems*, Colombia.

2020 **Consulting engineer**, *Universidad del Norte*, Colombia.
Project: "Technical/scientific studies and baseline designs for the feasibility of navigability of the Magdalena River"

Honors and awards

2013–2017 Orgullo Caribe Scholarship (Universidad del Norte)

Publications

[1] Diego Andrés Casas Toro. "Influence of waves on the transport and fate of sediments from a submarine sewage outfall in shallow coastal waters". M.Sc. dissertation. Curitiba, Brazil: Federal University of Paraná, 2023. URL: https://hdl.handle.net/1884/82595.

[2] German Rivillas-Ospina, **Diego Casas**, Mauro Antonio Maza-Chamorro, Marianella Bolívar, Gabriel Ruiz, Roberto Guerrero, José M. Horrillo-Caraballo, Milton Guerrero, Karina Díaz, Roberto del Rio, and Erick Campos. "APPMAR 1.0: A Python application for downloading and analyzing of WAVEWATCH III® wave and wind data". In: *Computers & Geosciences* 162 (May 2022), p. 105098. ISSN: 00983004. DOI: 10.1016/j.cageo.2022.105098.

[3] German Rivillas-Ospina, Mauro Antonio Maza-Chamorro, Sebastián Restrepo, Debora Lithgow, Rodolfo Silva, Augusto Sisa, Andrés Vargas, Juan Pablo Sarmiento, Juan Caes, Marianella Bolivar, Roberto Del Rio, Erick Campo, **Diego Casas**, and Dennis Rudas. "Alternatives for Recovering the Ecosystem Services and Resilience of the Salamanca Island Natural Park, Colombia". In: *Water* 12 (5 May 2020), p. 1513. ISSN: 2073-4441. DOI: 10.3390/w12051513.

Presentations

2023 "Modeling the transport of outfall sediments under wave action". Webinar of the IAHR Brazil Young Professionals Network. youtu.be/3K7UAPZUYTc.

2023 "Coupled wave-current modeling of outfall sediment dynamics in shallow coastal waters". 4th International Symposium on Outfall Systems. Buenos Aires, Argentina.

2022 "Modelagem do transporte de sedimentos oriundos de emissários submarinos sob efeito de ondas". V Simpósio PPGERHA. Federal University of Paraná, Curitiba, Brazil.

Relevant skills and experience

- Hydrodynamic and wave modeling (Delft3D FLOW and WAVE)
- Proficient in programming for numerical modeling and data analysis (Fortran, C/C++, Go, Python, Julia, R and MATLAB)
- Proficient in geographic information systems (GIS) and geoprocessing, including remote sensing and satellite images
- Linux, shell scripting and cloud computing
- Development of APPMAR: a program for analysis of wave and wind climate (github.com/cemanetwork/appmar)

- Development of GMDApp: an application for ground motion time series selection (github.com/gaaraujo/GMDApp)

Languages

Spanish	Native
English	Fluent (CEFR level C1)
Portuguese	Fluent