Diego A. Casas

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EDUCATION

Universidad del Norte — Barranquilla, Colombia
B.Sc. in Civil Engineering — February 2020

Federal University of Paraná — Curitiba, Brazil
M.Sc. Student in Water Resources and Environmental Engineering — February 2023 (expected)

RESEARCH AND WORK EXPERIENCE

Universidad del Norte — Barranquilla, Colombia
Contract Engineer — March 2020 – May 2020

- Developed hydrodynamic model of the Magdalena River mouth, Colombia
- Programmed Lattice Boltzmann solver for the shallow water equations
- Processed and analyzed hydromorphological data for numerical models
- Collaborated with coastal and river engineers on studies of the Magdalena River mouth

ATE Hydrosystems — Barranquilla, Colombia
Civil Engineer/Research Assistant — August 2020 – August 2020

- Performed hydrologic analysis of tailings storage facilities
- Implemented non-Newtonian hydrodynamic model for tailings runout analysis
- Collaborated with hydraulic and geotechnical engineers on risk assessment of tailings dams
- Applied remote sensing techniques for shoreline detection from satellite imagery
- Developed graphical user interface for download and analysis of wave and wind climate datasets
- Studied the application of the Lattice Boltzmann Method for modeling river mouths

PUBLICATIONS

- G. Rivillas-Ospina, M. A. Maza-Chamorro, S. Restrepo, D. Lithgow, R. Silva, A. Sisa, A. Vargas, J. P. Sarmiento, J. Caes, M. Bolivar, R. del Rio, E. Campo, **D. Casas**, and D. Rudas, "Alternatives for Recovering the Ecosystem Services and Resilience of the Salamanca Island Natural Park, Colombia," *Water*, vol. 12, no. 5, p. 1513, May 2020.
- G. Rivillas-Ospina, **D. Casas**, M. A. Maza-Chamorro, M. Bolívar, G. Ruiz, R. Guerrero, J. M. Horrillo-Caraballo, M. Guerrero, K. Díaz, R. del Rio, and E. Campos. "APPMAR 1.0: A Python application for downloading and analyzing of WAVEWATCH III® wave and wind data," Computers & Geosciences, vol. 162, p. 105098, May 2022.

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)

MEMBERSHIP

- Red de Investigadores en Ecohidrología y Ecohidráulica (REDECOHH) (2020–Present)
- Coastal Ecosystem Management Network (CEMAN) (2020–Present)

LANGUAGES

- Spanish (Native)
- English (Advanced, CEFR level C1)
- Portuguese (Intermediate)

REFEREES

Dr. Germán D. Rivillas-Ospina
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