LAURA V. ALVAREZ, PhD
Assistant Professor, Department of Earth, Environmental and Resource Sciences,
University of Texas at El Paso
NSF CAREER Awardee
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I. EDUCATION AND TRAINING

Doctor of Philosophy in Geography Aug 2011 –May 2015
School of Geographical Sciences and Urban Planning
Arizona State University, Tempe, Arizona

Master of Science in Geography Aug 2008 – Aug 2010
School of Geographical Sciences and Urban Planning
Arizona State University, Tempe, Arizona

Bachelor of Engineering – Suma Cum Laude Aug 2001 - Sept 2007
Civil Engineering, School of Mines
National University of Colombia, Medellín, Colombia

II. ACADEMIC RESEARCH APPOINTMENTS

University of Texas at El Paso Sep 2020 – Present
Department of Earth, Environmental and Resource Sciences
Position: **Assistant Professor**

University of Oklahoma & Simon Fraser University Jan 2019 – Aug 2020
Position: **NSF-EAR Postdoctoral Research Fellow**

University of Oklahoma Jan 2018- Dec 2018
Center for Autonomous Sensing and Sampling
College of Atmospheric and Geographic Sciences
Position: **Postdoctoral Research Associate**

Arizona State University Aug 2009 – May 2015
School of Geographical Sciences and Urban Planning
Position: **Research Assistant**

New Mexico Tech Jun 2008 – Aug 2008
Department of Earth and Environmental Sciences
Position: **Research Assistant**

National University of Colombia Jan 2007 – Apr 2008
School of Environmental Sciences and Urban Planning
Position: **GIS Analyst Full-Time**

Water and Energy Government Organization of Medellin – Colombia Jan 2006 – Jun 2006
Position: **Water Resources Internship**
Project: Hydraulic Simulation of a Water Supply Net Pipe System in the Aburra Basin

III. ACADEMIC TEACHING APPOINTMENTS

University of Texas at El Paso Sep 2020 – Present
Department of Earth, Environmental and Resource Sciences
Position: **Assistant Professor**
Courses:
GEOL 4385/5321/6321 – Introduction to Geographical Information Systems
GEOL 5322/6322 - Advanced GIST
GEOG 1306 – Physical Geography
GEOG 1106 – Laboratory for Physical Geography

University of Oklahoma Jan 2015 – Dec 2017
Department of Geography and Environmental Sustainability
Position: **Lecturer**
Courses:
GEOG 4201/5201 – Fluvial Geomorphology
GEOG 4203/5203 - Geomorphology
GEOG 1114 – Physical Geography
GEOG 3023 – Principles of Physical Geography

Arizona State University Jan 2010 - Dec 2012
Department of Geographical Sciences and Urban Planning
Position: **Teaching Assistant**
Courses
GPH 111 – Introduction to Physical Geography
GPH 211 - Introduction to Landform Processes (online course)

New Mexico Tech Jan 2009 – May 2009
Department of Earth and Environmental Sciences
Position: **Teaching Assistant:**
Courses:
ERTH 340 - Global Change Hydrology

National University of Colombia Aug 2004 – Nov 2005
Department of Water Resources and Environmental Sciences
Position: **Teaching Assistant:**
Courses:
Fluid Mechanics (400 level)

IV. HONORS AND AWARDS

[1] UTEP Innovation Award – Early Career Innovator (5,000)	April 2024
[2] National Science Foundation (NSF) CAREER Award ($552,381)	August 2023
[2] National Science Foundation (NSF) Postdoctoral Fellowship ($174,000)	January 2019
[3] 2013-2014 ASU Dissertation Fellowship ($17,000)	August 2013
[4] Anthony Brazel Research Exam Award ($1,000)	April 2012
[5] Arizona State University Graduate Fellowship ($5,000)	Aug 2009
[6] Suma Cum Laude in Civil Engineering, National University of Colombia	Sept 2007

V. FUNDING RECORD

A. ACTIVE FUNDED GRANTS

[1] **National Science Foundation.** PI (100% - contribution). *CAREER: Understanding the Physics of Turbulent Flow, Erosion and Depositional Patterns in River Systems,.* $552,381. [07/01/2023 – 08/31/2028].

[2] **U.S. Army Research Office (ARO).** PI (60% contribution) with Moreno. *Model-based Reinforced Learning for Accurate and Efficient Process Representation of Advection-Diffusion and Turbulent Processes Using Adaptive Domain Redefinition,* $150,587. [09/01/2024 – 08/31/2025].

[3] **National Science Foundation.** Co-PI (15% contribution) with Jin (PI), Ricketts, Young, Chapman, Engle, and Kubicki. *Improving Minority Advancement for Geoscience Equity Nationally (IMAGEN),* $607,542. [01/01/2024 – 12/31/2026].

[4] **U.S. Department of Defense (DoD).** Co-PI (10%) with Velez-Reyez (PI), Moreno, Romero, Roberts, and a Shian. *Establishment of the Robotics and Autonomous Systems Research and Teaching Laboratory,* $538,415. [06/01/2024 – 05/31/2025].

[5] **U.S. Natl. Oceanic and Atmospheric Admin (NOAA).** Co-PI (10% contribution) with Velez-Reyez (PI), Heyman, Tweedy, Roberts, Santiago, and Moreno. *NOAA EPP/MSI Cooperative Science Center for Earth System Sciences and Remote Sensing Technologies* (CESSRST), $1,165,000. [09/01/2022 - 08/31/2027].

[6] **U.S. Army Research Office (ARO).** Co-PI (23% contribution) with Gill (PI), Chaput, and Karplus. *Collaborative Research: Cohesive Particle Flow Research,* $ 457,496. [01/01/2023 – 12/31/2028].

B. PREVIOUS FUNDED GRANTS

[7] **National Science Foundation**. PI (100% - contribution). *EAR-Postdoctoral Fellowship: The Mechanics of Turbulence and Sediment Transport: Physically-Based Numerical Modeling of Flow, Sediment and Bed Evolution in the Bedrock Canyons,* $174,000. [01/01/2019 – 12/ 31/2021].

[8] **U.S. Natl. Oceanic and Atmospheric Admin (NOAA).** Supporting Ryan Cruz - UG student, Alvarez (Advisor). *NOAA Experiential Research and Training Opportunities* (NERTO), $13,000.00. (August 15, 2021 - August 15, 2022).

C. GRANTS NOT FUNDED

[1] **Alfred P. Sloan Foundation**. PI (100% - contribution). Sloan Fellowship, $75,000.

[2] **Microsoft: Water Sustainability Resources and Technology Division**. PI (100% contribution). *Iterative Integration of Artificial Intelligence (AI) and Autonomous Systems in Hybrid Water and River Modeling,* $100,000.

[3] **Proposal UTEP Research Excellence Program**. Co-PI (40% contribution) with Moreno (PI), and Pennington, *Machine Learning for Geospatial Exploration in the Earth Sciences,* $ 232,272.

[4] **The International Boundary and Water Commission (IBWC).** Co-PI (35% contribution) with Mayer (PI) and Langford. *Sediment Management of the Rio Grande downstream Caballo Lake*, $1,100,000.

[5] **National Aeronautics and Space Administration (NASA).** Co-PI (40% contribution) with Hurtado (PI). *Robotic Field Assistants for Autonomous Documentation of Planetary EVA's and Systematic Data Collection Tasks*, $590,078.00.

[6] **National Science Foundation (NSF).** Co-PI (5% - contribution) with Mayer and Wagler (PIs). *RET Site: Water Security & Data Science (H2OData)*, $600.000.

[7] **Department of Energy (DoE).** Co-PI (30% contribution) with Moreno (PI) and Mauritz. *An AI-Based Approach to Quantify the Role of Soil Water Content, Vegetation Type, Cover and Activity, Carbon Fluxes and Atmospheric Regimes on the PAR*, $399,958.

VI. ARTICLES IN PEER-REVIEWED JOURNALS (* WITH STUDENTS, @INDICATE LEAD AUTHOR)

[1]* España, R.E., @**Alvarez, L.V.,** Samarasinghe, J.T., 2025. "Grid Independence Studies Applied to a Field-scale Computational Fluid Dynamic (CFD) Model Using the Detached Eddy Simulation (DES) Technique Along a Reach of the Colorado River in Marble Canyon". *Earth Surface Processes and Landforms*, 50(3), e70030. https://doi.org/10.1002/esp.70030

[2] @Huang, J., Sehgal, V., **Alvarez, L.V., J,** Brocca, L., Cai, S., Cheng, R., Cheng, X., Du, J., El Masri, B., Endsley, K.A., Fang, Y., Hu, J., Jampani, M., Kibria, M.G., Koren, G., Li, L., Liu, L., Mao, J., Moreno, H.A., Rigden, A., Shi, M., Shi, X., Wang, Y., Zhang, X., Fisher, J.B**.,** 2025. "Remote Sensing-Based High-Resolution Soil Moisture and Evapotranspiration: Bridging the Gap between Science and Society". *Water Resources Research,* WRCR70151. https://doi.org/10.1029/2024WR037929

[3]*@Aslantas, B., Maleska, V., **Alvarez, L.V.,** Babalola, S.O., 2024. **"**Flood Risk Assessment for Mulde River Catchment Transferring Data from An Observed Meteorological Flood Event". *Results in Engineering, Volume 24, 103029.* https://doi.org/10.1016/j.rineng.2024.103029

[4] *Sotelo-Torres, F., @**Alvarez, L.V.,** Roberts, R.C., 2023. An Unmanned Surface Vehicle (USV): Development of an Autonomous Boat with a Sensor Integration System for Bathymetric Surveys. *Sensors*, *23*, 4420. https://doi.org/10.3390/s23094420

[5] @Hong, Z., Moreno, H.A., **Alvarez, L.V.**, Li, Z., Hong, Y., 2023. "Triple Collocation of Ground-, Satellite- and Land Surface Model-Based Surface Soil Moisture Products in Oklahoma Part II: New Multi-Sensor Soil Moisture (MSSM) Product." *Remote Sensing, 15, 3450.* https://doi.org/10.3390/rs15133450

[6] @Hong, Z., Moreno, H.A., Li, Z., Li, S., Greene, J.S., Hong, Y., **Alvarez, L.V**., 2022. "Triple Collocation of Ground-, Satellite- and Land Surface Model-Based Surface Soil Moisture Products in Oklahoma—Part I: Individual Product Assessment". *Remote Sensing*, *14*, 5641. https://doi.org/10.3390/rs14225641

[7] @**Alvarez, L.V.**, Grams P.E., 2021. "An eddy-resolving numerical model to study turbulent flow, sediment and bed evolution using Detached Eddy Simulation in a lateral separation zone at the field-scale". *Journal of Geophysical Research-Earth Surface,* 126, e2021JF006149. https://doi.org/10.1029/2021JF006149.

[8] @**Alvarez L.V.**, Moreno H.A., Segales A.R., Pham T.G., Pillar-Little E.A., Chilson P.B., 2018. "Merging Unmanned Aerial Systems (UAS) Imagery and Echo Soundings with an Adaptive Sampling Technique for Bathymetric Surveys". *Remote Sensing*, 10 (9). https://doi.org/10.3390/rs10091362.

[9] @Moreno H.A., Ogden F.L., **Alvarez L.V.,** 2018. "Unstructured-Mesh Terrain Analysis and Incident Solar Radiation for Continuous Hydrologic Modeling in Mountain Watersheds".*Water*,10 (4), p 398 https://doi.org/10.3390/w10040398.

[10] @**Alvarez, L.V.**, Schmeeckle, M.W., Grams P.E., 2017. "A Detached Eddy Simulation Model for the Study of Lateral Separation Zones Along a Large Canyon-Bound River". *Journal of Geophysical Research-Earth Surface, 122(1) pp 25-49.* https://doi.org/10.1002/2016JF003895.

[11] @**Alvarez L.V.**, Schmeeckle M.W, 2013. "Erosion of River Sandbars by Diurnal Stage Fluctuations in the Colorado River in Marble and Grand Canyons: Full-Scale Laboratory Experiments". *River Research and Applications*, 29: 839-854. https://doi.org/10.1002/rra.2576.

VII. LIST OF NON-REFEREED ARTICLES PUBLISHED IN SCHOLARLY PUBLICATIONS

[1] @Grams, P. E., **Alvarez, L. V.,** Kaplinski, M., Wright, S., 2021. Repeat measurements of bathymetry, streamflow velocity and sediment concentration made during a high flow experiment on the Colorado River in Grand Canyon, March 2008. U.S. Geological Survey Data. Release. https://doi.org/10.5066/P9O00Z44.

This data release, which has a DOI, was not peer-reviewed. It was made publicly available through a research database as part of Alvarez & Grams, 2021.

VIII. ARTICLES IN THE PROCESS OF REVIEW FOR SUBMISSION (* WITH STUDENTS, @INDICATE LEAD AUTHOR)

[1] *Samarasinghe, J.T., @**Alvarez, L.V.,** Hurson, M., Venditti, J.G. **(In preparation 95%)**. "Modeling Plunging Flows in Bedrock Rivers Using Computational Fluid Dynamics with Large Eddy Simulation: Insights from Scaled Laboratory Experiments." *Journal of Geophysical Research-Earth Surface.* **Expected to be submitted on June 20, 2025.**

J.H. Samarasinghe is currently one of my Ph.D. students in Environmental Science and Engineering, and this publication will be submitted as part of his dissertation research.

[2] *De la Fuente, L.A.,@ **Alvarez**, **L.V.,** Moreno, H.A., Gupta, H.V. **(In preparation 70%).** A Novel Nonlinear Correlation Matrix Constructed with Kolmogorov-Arnold Networks for Interpretable Dependency Modeling. *Journal of Geophysical Research - Machine Learning.*

L.A. De la Fuente is currently serving as my Postdoctoral Research Associate, and this work is being developed as part of his postdoctoral role.

[3] @Chafe, P., **Alvarez L.V**., et al., (in preparation 50%). Unsolved Problems of Hydrology in Latin America. *Journal of Hydrologic Science*

This manuscript is a review paper, which I contributed to by writing specific sections.

IX. ADVISEES

Postdoctoral Research Associate: Luis De La Fuente 2025-present

Graduate (chair)

[1] Jayanga Samarasinghe	Ph.D. Environmental Science and Engineering	2022 – present
[2] Andrea Chavez	Ph.D. Environmental Science and Engineering	2024 – present
[3] Derek Guerra	Ph.D. Electrical Engineering	2024 - present
[4] Valentina Sanchez	Ph.D. Environmental Science and Engineering	2023 - 2024
[5] Betul Aslantas	Ph.D. Environmental Science and Engineering	2023 - 2024
[6] Fernando Sotelo	M.Sc. Electrical Engineering	2021 – 2022 (graduated)
[7] Rosa Elena España	M.Sc. Environmental Sciences	2021 – 2023 (graduated)

Undergraduate (interns)

[8] Alfonso Murguia	Mechanical Engineering	2025 - present
[9] Derek Guerra	Electrical Engineering	2024 - present
[10] Kevin Ortega	Electrical Engineering	2023
[11] Ryan Cruz	Mechanical Engineering	2020 – 2023

X. PROFESSIONAL SERVICE

Departmental Service at UTEP

[1] Geology Graduate Admission Committee (member)

[2] GIST Committee (member).

[3] Faculty Senate Advisory Committee: Centennial Museum & Chihuahuan Desert Gardens (member)

[4] Faculty Recruiter for GIST Committee Faculty Search (member)

[5] Scholarship Committee (member).

[6] Earth Science Day, exhibitor.

[7] UTEP Aware Annual Tour to GeoSenSE-DEERS (2022-2024).

[8] Graduate Committee member:
(a) Alison Segura (Masters Environmental Sciences),
(b) Marisol Dominguez (Ph.D. Geological Sciences),
(c) Shandell Thomas (Masters Environmental Sciences)

[9] Course revamping:
(a) Physical Geography, (b) Laboratory for Physical Geography, (c) Intro to GIS/GIST, (d) Advanced GIST, and (e) Data Analytics Google Certificate.

[10] Community Engagement: Art Exhibit: "Rivers and Basins" – Centennial Museum. https://scholarworks.utep.edu/nsf/1/

[11] Director GeoSenSE, GeoSenSE remodeling room 124, GeoSenSE website: https://www.utep.edu/science/geosense/

At the National Level

[11] HydroML Symposium organizer.

[12] NSF service (panels and proposals reviewer).

[13] AGU Fall Meeting Convener (2024 & 2025)

Media Contributions

UTEP Marketing and Communications: This Self-Driving Boat Maps Underwater Terrain. (June 27th, 2023). https://www.utep.edu/newsfeed/2023/this-self-driving-boat-maps-underwater-terrain.html

XI. PROFESSIONAL AFFILIATIONS

[1] American Geophysical Union (AGU).

[2] Geological Society of America (GSA).

[3] Association of American Geographers (AAG).

[4] National Association of Geoscience Teachers (NAGT).

[5] Latinas in Earth and Planetary Sciences (GeoLatinas).

[6] National Association of Engineering in Colombia (ANEIC).

[7] FAA Part 107 Commercial Drone Pilot License.

XII. INVITED TALKS, PRESENTATIONS AND POSTERS (* WITH STUDENTS, ~ INDICATE INVITED SPEAKER)

[33] ~**Alvarez, L.V.,** 2025. "Merging Physics-Informed, Machine Learning Models and Autonomous Systems Technology for Enhancing Fluvial Geomorphology and Hydraulic Engineering." *National Science Foundation Seminar Series*.

[32] *Chavez, A., **Alvarez, L.V.**, 2025. "Using Generative Artificial Intelligence to Enhance Hydrologic Models." *Poster, Third Annual NOAA- **C**enter for **E**arth **S**ystem **S**ciences and **R**emote **S**ensing **T**echnologies (CESSRST) Meeting (NOAA-CESSRST 2025).*

[31] *Sanchez, V., **Alvarez, L.V.**, 2024. "Enhancing Numerical Simulations of Turbulent Flows in Canyon Bound Bedrock Rivers through Hybrid Deep Learning-Based Reduced Order Modeling". *Poster, The Conference on **C**omputational **M**ethods in **W**ater **R**esources (CMWR 2024)*

[30] *Samarasinghe, J.D., **Alvarez, L.V.**, 2024. "Enhancing Numerical Simulations of Turbulent Flows in Canyon Bound Bedrock Rivers through Hybrid Deep Learning-Based Reduced Order Modeling." *Poster, The Conference on **C**omputational **M**ethods in **W**ater **R**esources (CMWR 2024).*

[29] *Sanchez, V., **Alvarez, L.V.,** 2024. "Comparative Evaluation of LSTM, GRU, and WaveNET Models for Predicting Velocity of Physics-Based Numerical Models." *Poster, American Geophysical Union, 2024, Fall Meeting, Washington D.C.*

[28] *Samarasinghe, J.D., **Alvarez, L.V.**, Venditti J.G., 2024. "Eddy-Resolving Simulations of Plunging Flow Dynamics and Turbulence in Alexandra Canyon, Fraser River: Insights into Bedrock Erosion and Morphological Changes." *Poster, American Geophysical Union, 2024, Fall Meeting, Washington D.C.*

[27] *Samarasinghe, J.D., **Alvarez, L.V.**, 2023. "Understanding plunging flows through a Large Eddy Simulation Model in the Alexandra Canyon of the Fraser River in British Columbia." *Poster, American Geophysical Union, 2023, Fall Meeting, San Francisco, CA.*

[26] **Alvarez, L.V.**, 2023. Understanding the Physics of Turbulent Flow, Erosion, and Depositional Patterns in River Systems using Physics-based models, Machine Learning and Autonomous Systems. *Poster, American Geophysical Union, 2023, Fall Meeting, San Francisco, CA.*

[25] *Samarasinghe, J.D., **Alvarez, L.V.,** 2023. "Multi-Physics Based Modelling Approach to Understand Plunging Flows in Laboratory and Field–Scale Bedrock Rivers Using Eddy-Resolving Models." *13th Symposium on River, Coastal and Estuarine Morphodynamics, RCEM.*

[24].*Samarasinghe, J.D., **Alvarez, L.V.,** Venditti J.G., 2022. "Understanding Plunging Flows Mechanisms in The Fraser River Using a Large Eddy Simulation Model." *Poster, American Geophysical Union, 2022 Fall Meeting, Chicago, IL.*

[23]. *España, R.E., **Alvarez L.V**., 2022. "Grid Independence Studies of Eddy-Resolving Models at The Scale of a River Reach Along a Transect in Marble Canyon of The Colorado River, Arizona." *Presentation Type: Poster, American Geophysical Union, 2022 Fall Meeting, Chicago, IL.*

[22]. **Alvarez, L.V.**, Grams, P.E., Sotelo-Torres, F., 2022. "Integrated Multi Physics-Based Modeling Framework to Quantify River Geomorphologic Changes in Field-Scale Rivers Based on Eddy Resolving Models Combined with Autonomous Systems." *Presentation Type: Oral Presentation, American Geophysical Union, 2022 Fall Meeting, Chicago, IL.*

[21] ~**Alvarez L.V**., 2022. Physically-Based Numerical Modeling aided by Machine Learning and Autonomous Systems to Study Fluvial and Water Environments. *DoE PNNL HBCU/MSI Seminar Series.*

[20] *Cruz R., **Alvarez, L.V.**, Moreno H.A., 2022. "Development Of Small Unmanned Aerial Systems For Subpixel Vegetation Activity Monitoring." *NOAA-CoRP Meeting, Fort Collins, CO.*

[19] *Cruz R., **Alvarez, L.V.**, Moreno, H.A., 2022. "Development Of Small Unmanned Aerial System for Subpixel Vegetation Activity Monitoring." *Tenth Biennial NOAA EPP/MSI Education and Science Forum at Florida A&M University in Tallahassee, FL.*

[18] ~**Alvarez, L.V**., 2021. "Merging Physically-Based Numerical Modeling and Autonomous Systems to Study Fluvial and Water Environments." *NOAA-CESSRT Seminar Series, NY.*

[17] **Alvarez, L.V.**, Venditti J.G, Chilson P.B., 2019. "Eddy Resolving Model of Flow and Sediment Dynamics in Canyon Rivers at the Laboratory and Field Scales." *Oral Presentation, American Geophysical Union, 2019 Fall Meeting, San Francisco, CA.*

[16] Doyle W., **Alvarez, L.V.**, Whitehead M.S., Britto G., Chilson P.B., 2019. "Custom Autonomous Watercraft with Improved Transect Heading Accuracy to Ascertain Higher Quality Measurements with the Sontek River Surveyor S5." *Poster American Geophysical Union, 2019 Fall Meeting, San Francisco, CA.*

[15] **Alvarez, L.V.** 2018., "The Study of Turbulence, Sediment Transport and Bed Evolution in a Canyon River Using an Eddy Resolving Three-Dimensional Model." *Oral Presentation, American Geophysical Union, 2019 Fall Meeting, San Francisco, CA.*

[14] **Alvarez, L.V.**, P Grams, 2017., "*Numerical model of turbulence, sediment transport, and morphodynamics tested in the Colorado River at Grand Canyon". Poster, American* Geophysical Union, 2017, Fall Meeting, San Francisco, CA.

[13] Maples B.L., **Alvarez, L.V.**, Moreno H.A., Chilson P.B., Segales A., 2017. "Combining Cluster Analysis and Small Unmanned Aerial Systems (sUAS) for Accurate and Low-cost Bathymetric Surveying." *Poster, American Geophysical Union, 2017, Fall Meeting, San Francisco, CA.*

[12] **Alvarez, L.V.,** 2017. "The Study of Fluvial Processes through Super Computer Models and Full-Scale Laboratory Techniques." *Oral Presentation, National University of Colombia.* **Invited Speaker.**

[11] **Alvarez, L.V.,** 2017. "Using MBES to Develop a Detached Eddy Simulation (DES) Model in a Canyon-Bound River.". *Oral Presentation - MBES in Rivers Workshop.*

[10] **Alvarez, L.V.**, Schmeeckle, M.W., Grams P.E., Moreno H.A., 2015. "A coupled Turbulence Resolving Model of Turbulence and Sediment Transport of Lateral Separation Zones at Field Scale using Detached Eddy Simulation." *Poster, American Geophysical Union, 2015 Fall Meeting, San Francisco, CA.*

[9] Moreno, H.A., Ogden, F.L., Steinke, R.C., **Alvarez, L.V**., 2015. "A vectorial model to compute terrain parameters, local and remote sheltering, scattering and albedo using TIN domains for Hydrologic Modeling". *Poster, American Geophysical Union, 2015 Fall Meeting, San Francisco, CA.*

[8] **Alvarez, L.V.**, Schmeeckle, M.W., 2013. "Numerical Model of Turbulence, Sediment Transport, and Sediment Cover in a Large Canyon-Bound River". Presentation Type: Oral Presentation Abstract ID: 1813508. *Oral Presentation, American Geophysical Union, 2013 Fall Meeting, San Francisco, CA.*

[7] **Alvarez, L.V.**, Schmeeckle, M.W., 2013. "Numerical Modeling of Turbulence and Sediment Transport in Lateral Recirculation Zones along the Colorado River in Grand Canyon". *Community Surface Dynamics Modeling System (CSDMS) 2013 Annual Meeting, Boulder, CO*

[6] **Alvarez, L.V.**, Schmeeckle, M.W., 2012. "Laboratory and Numerical Modeling of Sandbar Bank Erosion, Application to Diurnal Stage Variations in Grand Canyon." *Oral Presentation, American Association of Geographers, 2012 Meeting, New York City, NY.*

[5] **Alvarez, L.V.**, Schmeeckle, M.W., 2011. "Laboratory and Numerical Modeling of Sandbar Bank Erosion, Application to Diurnal Stage Variations in Grand Canyon". American Geophysical Union, 2011 Fall Meeting, San Francisco, CA.

[4] **Alvarez, L.V.**, Schmeeckle, M.W., 2010. "Sandbar Beach Stability under River Stage Fluctuations, Full-Scale Laboratory Experiments". American Geophysical Union, 2010 Fall Meeting, San Francisco, CA.

[3] Schmeeckle, M.W., Akahori, R., Travis, Q.B., **Alvarez, L.V**., 2009. "Sandbars in the Colorado River in Grand Canyon, USA Downstream of Glen Canyon Dam." *Water Resources University's 50th Anniversary Workshop.*

[2] Smith, R., Rave, C., Builes, A., Piedrahita, C., Perez, S., **Alvarez, L.V**., 2008. "Methodology for Assessment of Environmental Noise as Atmospheric Contaminant in the Aburra Valley Basin". *Oral Presentation, International Seminar of Environmental Noise, Medellin, Colombia (in Spanish).*

[1] Smith, R., Rave, C., Builes A., Piedrahita, C., **Alvarez, L.V**., 2008. "Formulation of Government Policies for the Improvement of Air Quality based on Strategic Modeling of Energy, Environment and Economy". *XIV Latin Ibero-American Congress of Decision Making, Cartagena, Colombia (in Spanish).*