

Curriculum Vitae

Ronald R. Gutierrez, PhD.

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ACADEMIC DEGREES

07/2013	PhD. majoring in Water Resources Engineering , University of Pittsburgh, Pittsburgh, Pennsylvania, Department of Civil and Environmental Engineering
06/2012	M.Sc. , University of Pittsburgh, Pittsburgh, Pennsylvania, Department of Civil and Environmental Engineering.
12/1997	B.Sc. , National University of Engineering, Lima, Peru, Department of Civil Engineering.

RESEARCH INTERESTS

Broad areas of expertise and interests	<ul style="list-style-type: none">• River morphodynamics and sediment transport• Amazon River system• Ecohydraulics and environmental hydraulics• Erosion control• Experimental hydraulics
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PROFESSIONAL POSITIONS

01/18-present	Professor at the School of Civil and Environmental Engineering, University of the North (<i>Universidad del Norte</i>), Barranquilla, Colombia
07/13-present	Associate Professor at the School of Civil Engineering, Pontifical Catholic University of Peru (<i>Pontificia Universidad Católica del Perú</i>), Lima, Peru.
08/09-07/13	Graduate research assistant. Department of Civil and Environmental Engineering, University of Pittsburgh, PA, USA.
08/09-07/13	Teaching assistant for undergraduate and graduate courses such as Advanced Environmental Fluid Mechanics, Open Channel Hydraulics and Mechanics of Materials for Civil and Environmental Engineers. Department of Civil and Environmental Engineering, University of Pittsburgh, PA, USA.
1998-2009	Hydraulic and hydrology design specialist mainly for the transportation, mining and agricultural industry.

AWARDS/HONORS

- Award for innovation in education (Pontifical Catholic University of Peru, 2016) for coupling computer fluid dynamics and flipped classroom techniques to fluid mechanics teaching.
- Postdoctoral scholarship (Katholischer Akademischer Ausländer-Dienst, 2016) for a research staying at the University of Braunschweig, Germany.
- Postdoctoral scholarship (Pacific Alliance academic mobility program, 2015) for a research staying at the University of Concepcion, Chile.
- Postdoctoral scholarship (Pacific Alliance academic mobility program, 2014) for a research staying at the Universidad del Norte, Colombia.

- Graduate honoree student (University of Pittsburgh, 2013), 2013 Honors convocation of the University of Pittsburgh.
- Freeman fellowship (American Society of Civil Engineers, 2012) to carry out bathymetry (using a multibeam echo sounder) and velocity measurements (using ADCP) in the Amazon River.
- Student travel grant (American Geophysical Union, 2011) to give an oral presentation in the AGU Fall Meeting 2011. San Francisco, USA.
- International Student Fund Scholarship (Center for International Studies of the University of Pittsburgh, 2010) to carry out a one-month preliminary field work in the Amazon River, Peru.
- Student scholarship (International Erosion Control Association, 2001) to attend the 33rd Annual IECA Conference & Trade Exposition in Orlando, Florida. I was the first Latin American engineer bestowed with such scholarship.

PEER REVIEWED PUBLICATIONS

Papers

- **Gutierrez, R. R.**, Jose A. Mallma, Francisco Núñez-González, Oscar Link, and Jorge D. Abad (2018). "Bedforms-ATM, an open source software to analyze the scale-based hierarchies and dimensionality of natural bed forms", *SoftwareX*, (7) 184-189.
- **Gutierrez, R. R.** and Abad J. D. (2014). "On the analysis of the medium-term planform dynamics of meandering rivers", *Water Resources Research*, (50) 3714-3733.
- **Gutierrez, R. R.**, Choi, M., and Abad J. D. (2014). "Characterization of Free Meander Trains at the Upper Amazon Basin", *Geomorphology*, DOI: 10.1016/j.geomorph.2014.05.011.
- **Gutierrez, R. R.**, Abad J. D., Parsons, D. R., Best J. L. (2013). "Discrimination of bed form scales using robust spline filter and wavelets transforms: methods and application to synthetic signals and the Parana River, Argentina", *Journal of Geophysical Research-Earth Surface*, DOI: 10.1002/jgrf.20102.

OTHER PUBLICATIONS

Abstracts, talks, posters, conference proceedings

- **Gutierrez, R.R.**, Cabrera, J., Escusa, F., Pehovaz, R. (2017). "Combined application of CFD and flipped classroom practices in improving knowledge acquisition for an undergraduate water resources engineering related course." 33rd International Academic Conference, Viena, Austria.
- Fernandez, J. & **Gutierrez, R. R.** (2017). "Estimation of rainfall erosivity: A case study of Rimac River Basin." 1st World Conference on Soil and Water Conservation Under Global Change (CONSOWA), Lleida, Spain.
- Rosas, M.A., Vanacker, V., Huggel, C., **Gutierrez, R.R.** (2017). "Water and sediment dynamics in the context of climate change and variability." EGU General Assembly 2017, Vienna, Austria.
- Astorayme, M. A., **Gutierrez, R. R.**, Aguilar, R. and S. W. Retamozo (2017). "Generating a digital elevation model from the Structure-from-Motion technique in a Peruvian ephemeral river". 9th International Perspective on Water Resources and the Environment (IPWE 2017), Wuhan, China.
- Astorayme, M. A. and **Gutierrez, R. R.** (2017). "Statistical Downscaling based correction of the HadGEM2 family Global Circulation Models: Rimac basin, Peru". World Environmental & Water Resources Congress. Sacramento, California, USA.
- **Gutierrez, R. R.** & Abad, J. D. (2016). "An entropy-based classification scheme of meandering rivers". River Flows 2016, St. Louis, USA, July.

- Rosas, M. A. & **Gutierrez, R. R.** (2016). "Estimating Hydraulic Erosion Rates in Limited Data Contexts: Application to Peru". 18 International Soil Conservation Organization Conference, El Paso, Texas.
- Rosas, M. A. & **Gutierrez, R. R.** (2016). "A quantitative study of the hydraulic erosion rate in Peru". 18th International Soil Conservation Organization Conference, El Paso, Texas, USA.
- **Gutierrez, R. R.** & Abad, J. D. (2015). "On an entropy-based classification scheme of meandering rivers". AGU Fall Meeting 2015, San Francisco, USA.
- **Gutierrez, R. R.** & Abad, J. D. (2015) "On an entropy-based classification scheme of meandering rivers". RCEM 2015. Iquitos, Peru.
- **Gutierrez, R. R.**, Abad, J. D., Mallma, J. (2015). "An improved wavelet-based tool to discriminate bed form scales". RCEM 2015. Iquitos, Peru.
- **Gutierrez, R. R.**, Choi, M., Abad, J. D., Montoro, H. (2014). "Characterization of confluences of free meander trains at the upper Amazon basin". River Flow, Lausanne, Switzerland.
- **Gutierrez, R. R.**, Choi, M., Abad, J. D., Montoro, H. (2014). "Characterization of confluences of free meander trains at the upper Amazon basin". World's Large Rivers, Manaus, Brazil.
- **Gutierrez, R. R.**, Abad, J. D. (2014). "Temporal frequency balance and classification of meandering channels". World's Large Rivers, Manaus, Brazil.
- **Gutierrez, R. R.**, and Abad, J. D. (2013). "*Conservation of Meander Dynamics, From Cutoff to Migration Processes*", 35th IAHR World Congress, Chengdu, China.
- **Gutierrez, R. R.**, Choi, M., and Abad, J. D. (2013). "*Dynamics of meander train confluences*", 8th Symposium on River, Coastal and Estuarine Morphodynamics, RCEM 2013, Cantabria, Spain.
- **Gutierrez, R. R.** and Abad, J. D. (2013). "*Conservation of meander dynamics, from cutoff to migration processes*", 8th Symposium on River, Coastal and Estuarine Morphodynamics, RCEM 2013, Cantabria, Spain.
- **Gutierrez, R. R.**, Abad, J. D. , Parsons and J. Best (2013). "*Characterization of bedforms, application to the Parana River*", 8th Symposium on River, Coastal and Estuarine Morphodynamics, RCEM 2013. Cantabria, Spain.
- **Gutierrez, R. R.** and Abad, J. D. (2012). "*Statistical analysis of meandering rivers using wavelet transforms and principal component analysis*", American Geophysical Union (AGU), Fall Meeting 2012, San Francisco, USA.
- **Gutierrez, R. R.** and Abad J. D. (2012). "*Statistical analysis of meandering rivers using wavelet transforms and principal component analysis*", Tropical Rivers Conference, Iquitos, Peru.
- **Gutierrez, R. R.** Abad, J. D., Parsons, D., Best, J. (2011). "*Discrimination of bed form scales using robust spline filter and wavelet transforms: methods and application to synthetic signals and the Parana River, Argentina*". AGU Fall Meeting 2011, San Francisco, USA.
- **Gutierrez, R. R.** Abad, J. D., Parsons, D., Best, J., Orfeo (2011). "*1D-wavelets to the study of bed morphology in large river systems*". ASCE EWRI conference, Palm Springs, California, USA.
- **Gutierrez, R. R.**, Abad, J. D., Parsons, D., Best, J., Orfeo (2011). "*Wavelets application to study the bed forms of the Parana River*", XXXIV International Association of Hydraulics Engineering and Research Congress, Brisbane, Australia.
- **Gutierrez R. R.**, Abad, J. D., Parsons D., Best, J., Orfeo, O. (2010). "Aplicación de wavelets en el estudio de formas de fondo del Rio Paraná", XXIV Congreso Latinoamericano de Hidráulica, Punta del Este, Uruguay.

Software

- Gutierrez, R. R., Mallma, J, Nunez-Gonzales, F., Abad, J. (2016). Bed forms analysis toolkit for multiscale modeling (Bedforms-ATM). <https://sourceforge.net/projects/bedforms-atm/>.

Geophysical data

- Gutierrez, R. R. (2017): Synthetic data for the Bedforms Analysis Toolkit for Multiscale Modeling (Bedforms-ATM). doi:10.1594/PANGAEA.873304 (<https://doi.pangaea.de/10.1594/PANGAEA.873304>).