Adrian Huerta

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Education

2008 – 2013 **Bachelor Degree in Meteorology**, *National Agrarian University La Molina*, Peru.

2016 **Engineering Degree in Meteorology**, *National Agrarian University La Molina*, Peru.

2017 – 2019 **Master Degree in Water Resources**, *National Agrarian University La Molina*, Peru.

Awards and Honors

Oct 2018 – Nov 2018 **Korea International Cooperation Agency (KOICA) scholarship**, *Improvement of meteorological satellite data analysis and application capacity*, Korea Meteorological Administration (KMA), South Korea.

Sep 2019 – **The Overleaf Advisor Programme granting**, *Overleaf is an open-source online real-time collaborative LaTeX editor for scholarly writing and communication*, United Kingdom.

Apr 2020 **Top downloaded scientific paper 2018-2019**, For "A combined view on precipitation and temperature climatology and trends in the southern Andes of Peru" in International Journal of Climatology - WILEY.

Jan 2021 **GEOHealth scholarship**, *International Summer School of the School of Public Health*, Faculty of Medicine of the University of Chile, Chile.

Academic Positions

Sep 2022 – **Adjunct Faculty Professor**, *National Agrarian University La Molina*, Department of Physics and Meteorology, Peru.
Teaching load of 4 hours/week in Programming Techniques II for Meteorology

Work Experience

Jun 2013 – Dec 2013 **Internship**, *National Service of Meteorology and Hydrology of Peru (SENAMHI)*, Department of Climatology, Peru.

Jan 2014 – Jun 2016 **Research assistant**, *National Service of Meteorology and Hydrology of Peru (SENAMHI)*, Department of Hydrology, Peru.
Within the Data on climate and Extreme weather for the Central Andes (DECADE) project.

Aug 2016 – Dec 2019 **Research assistant**, *National Service of Meteorology and Hydrology of Peru (SENAMHI)*, Department of Hydrology, Peru.
Within the Servicios CLIMáticos con énfasis en los ANdes en apoyo a las DEcisioneS (CLIMANDES) phase 2 project.

Oct 2019 – Dec 2019 **Research consultant**, *HELVETAS Swiss Intercooperation*, Peru.
Within the Pachayachay/Pachayatiña project.

May 2019 – Jul 2021 **Research consultant**, *Libélula Institute for Global Change*, Peru.
Within the Apoyo a la Gestión del Cambio Climático (GestionCC) phase 2 project.

May 2019 – Aug 2022 **Research consultant**, *University of Engineering and Technology (UTEC)*, Peru.
Within the WateR security And climate cHange adaptation in PerUvian glacier-fed river basins (RAHU) project.

Aug 2020 – Dec 2020 **Research consultant**, *National Superintendence of Sanitation Services (SUNASS)*, Peru.
Water yield production in Peru using the Budyko framework.

Aug 2020 – Nov 2020 **Research consultant**, *National Service of Meteorology and Hydrology of Peru (SENAMHI)*, Department of Hydrology, Peru.
Development of an hourly precipitation gridded dataset at Chillon, Rimac, and Lurin basins.

Dec 2020 – Jul 2021 **Research consultant**, *Forest Trends*, Peru.
Within the Natural Infrastructure for Water Security (NIWS) in Peru project.

Oct 2021 – Dec 2021 **Research consultant**, *National Superintendence of Sanitation Services (SUNASS)*, Peru.
Climate change impact on water yield production in Peru using the Budyko framework.

Jun 2021 – Dec 2021 **Research consultant**, *National Service of Meteorology and Hydrology of Peru (SENAMHI)*, Department of Hydrology, Peru.
Development of an hourly precipitation gridded dataset at Peru scale.

Jan 2022 – Jun 2022 **Research consultant**, *Antapaccay Mining Company - GLENCORE*, Peru.
Climate characterization and assessment of the impact of climate change associated with dam safety.

Mar 2022 – Jun 2022 **Research consultant**, *National Water Authority of Peru (ANA)*, Peru.
Climate change analysis in the water availability in six hydrographic basins.

Jun 2022 – **Research consultant**, *National Service of Meteorology and Hydrology of Peru (SENAMHI)*, Department of Hydrology, Peru.
Within the Enhancing Adaptive Capacity of Andean Communities through Climate Services (ENANDES) project.

Academic teaching experience

Nov 2019 "R applied to hydrology" - Andes Engineers and Projects – 16 hours

Aug 2020 "R applied to hydro-meteorology" - National Service of Meteorology and Hydrology of Peru (SENAMHI) – 28 hours

Publications

In international peer-reviewed scientific journals

2018 Hunziker, S., Brönnimann, S., Calle, J., Moreno, I., Andrade, M., Ticona, L., **Huerta, A.**, Lavado-Casimiro, W. (2018). Effects of undetected data quality issues on climatological analyses. Climate of the Past, 14(1), 1-20. https://doi.org/10.5194/cp-14-1-2018

2019 Imfeld, N., Barreto Schuler C., Correa Marrou K. M., Jacques-Coper M., Sedlmeier K., Gubler S., **Huerta, A.**, and Brönnimann S. (2019). Summertime precipitation deficits in the southern Peruvian highlands since 1964. International Journal of Climatology, 39(11), 4497–4513. https://doi.org/10.1002/joc.6087

Aybar, C., Fernández, C., **Huerta, A.**, Lavado, W., Vega, F., and Felipe-Obando, O. (2019). Construction of a high-resolution gridded rainfall dataset for Peru from 1981 to the present day. Hydrological Sciences Journal, 65(5), 770-785. https://doi.org/10.1080/02626667.2019.1649411

2021 **Huerta, A.**, and Lavado-Casimiro, W. (2021). Trends and variability of precipitation extremes in the Peruvian Altiplano (1971–2013). International Journal of Climatology, 41(1), 513-528. https://doi.org/10.1002/joc.6635

Imfeld, N., Sedlmeier, K., Gubler, S., Correa Marrou, K., Davila, C. P., **Huerta, A.**, Lavado-Casimiro, W., Rohrer, M., Scherrer, S.C., and Schwierz, C. (2021). A combined view on precipitation and temperature climatology and trends in the southern Andes of Peru. International journal of climatology, 41(1), 679-698. https://doi.org/10.1002/joc.6645

Delahoy M. J., Cárcamo C., **Huerta, A.**, Lavado W., Escajadillo Y., Ordoñez L., Vasquez V., Lopman B., Clasen T., Gonzales G, Steenland K., and Levy K. (2021). Meteorological factors and childhood diarrhea in Peru, 2005–2015: a time series analysis of historic associations, with implications for climate change. Environmental Health 20(1), 1-10. https://doi.org/10.1186/s12940-021-00703-4

2022 Bojorquez, M., **Huerta, A.** and Calle, V. (2022). A Case Study of a High Impact Snowfall Event in the Southern Andes of Peru: Dynamics and Evaluation of the Eta Model. Revista Brasileira de Meteorologia, 37(1). https://doi.org/10.1590/0102-7786360012

Huerta, A., Bonnesoeur, V., Cuadros, J., Gutierrez Lope, L. F., Ochoa-Tocachi, B., Román-Dañobeytia, F., Lavado-Casimiro, W. (2022). PISCOeo_pm, a reference evapotranspiration gridded database based on FAO Penman-Monteith in Peru. Nature Scientific Data, 9(1), 1-18. https://doi.org/10.1038/s41597-022-01373-8

Huerta, A., Lavado-Casimiro, W., and Felipe-Obando, O. (2022). High-resolution gridded hourly precipitation dataset for Peru (PISCOp_h). Data in Brief, 108570. https://doi.org/10.1016/j.dib.2022.108570

Dávila, J.E., Tapia, V., Vasquez, B.V., Anchiraico-Agudo, W.R., **Huerta, A.**, Chauca, J. and Gonzales, G.F. Seasonality and meteorological factors in Acute Upper Respiratory Infections (AURIs) in children under 5 years old in Piura, Peru. In preparation for the Journal of Environmental and Public Health.

Huerta, A., Aybar, C., Imfeld N., Correa K., Felipe-Obando O., Rau, P., Drenkhan, F. and Lavado-Casimiro W. High-resolution grids of daily air temperature for Peru - the PISCOt v1.2 dataset. In preparation for Nature Scientific Data.

Gutierrez, L., Lavado-Casimiro, W., Sabino, E. and **Huerta, A**. Satellite-based estimation of rainfall erosivity for Peru: Spatio temporal evaluation 2000-2020. In preparation for Remote Sensing.

Books/monographs

2017 Aybar, C., Lavado-Casimiro, W., Sabino, E., Ramírez S., **Huerta, A.**, and Felipe-Obando, O., (2017). Atlas de zonas de vida del Perú – Guía Explicativa ["Atlas of life zones of Peru – Explanatory Guide"]. National Service of Meteorology and Hydrology of Peru. https://repositorio.senamhi.gob.pe/handle/20.500.12542/259

Aybar, C., Lavado-Casimiro, W., **Huerta, A.**, Fernández, C., Vega, F., Sabino, E., and Felipe-Obando, O., (2017). Uso del Producto Grillado PISCO de precipitación en Estudios, Investigaciones y Sistemas Operacionales de Monitoreo y Pronóstico Hidrometeorológico ["Use of the PISCO precipitation Gridded Product for Studies, Research and Operational Systems for Monitoring and Hydrometeorological Forecasting"]. National Service of Meteorology and Hydrology of Peru. https://repositorio.senamhi.gob.pe/handle/20.500.12542/260

2018 Andrade, M. F., Moreno, I., Calle, J. M. , Ticona, L., Blacutt, L., Lavado-Casimiro, W., Sabino, E., **Huerta, A.**, Aybar, C., Hunziker, S., and Brönnimann, S. (2018). Atlas - Clima y eventos extremos del Altiplano Central perú-boliviano / Climate and extreme events from the Central Altiplano of Peru and Bolivia / 1981-2010. Geographica Bernensia, 188 pp. https://doi.org/10.4480/GB2018.N01

Huerta, A., Aybar, C., Lavado-Casimiro W. (2018). PISCO temperatura v1.1 ["PISCO temperature v1.1"]. National Service of Meteorology and Hydrology of Peru. http://iridl.ldeo.columbia.edu/documentation/.pisco/.PISCOt_report.pdf

2020 Lavado-Casimiro, W., Llauca, H., Montesinos, C., Asencios, H., Ordoñez, J., Sosa, J., Yali, R., Tupac-Yupanqui, R., Quijada, N., Asurza, F., Traverso, K., **Huerta, A.**, Sabino, E. and Vega, F., Estudios Hidrológicos del SENAMHI: Resúmenes Ejecutivos - 2020 ["SENAMHI Hydrological Studies: Executive Summaries - 2020"]. National Service of Meteorology and Hydrology of Peru. https://www.senamhi.gob.pe/load/file/01401SENA-90.pdf.

2021 **Huerta, A.**, and Lavado-Casimiro, W. (2021). Atlas de zonas áridas del Perú: una evaluación presente y futura ["Atlas of arid zones of Peru: a present and future evaluation"]. National Service of Meteorology and Hydrology of Peru. https://hdl.handle.net/20.500.12542/1206

Huerta, A., and Lavado-Casimiro, W. (2021). Atlas de producción de agua en el Perú: una evaluación presente y futura con énfasis en las cuencas de aporte de la EPS ["Atlas of water yield production in Peru: a present and future evaluation with emphasis on the contribution basins of the EPS"]. National Service of Meteorology and Hydrology of Peru. https://hdl.handle.net/20.500.12542/1610

Peer-reviewed conference proceedings

2020 **Huerta, A.**, Lavado-Casimiro, W., and Rau, P. (2020). The vulnerability of water availability in Peru due to climate change: A probabilistic Budyko analysis. https://doi.org/10.5194/egusphere-egu2020-3766

Zevallos-Ruiz, J. A., **Huerta, A.**, Lavado-Casimiro, W., Sabino, E., vega, F., and Felipe, O. (2020). Climate change impacts on biomes and aridity in Peru. https://doi.org/10.5194/egusphere-egu2020-20432

Lavado-Casimiro, W., Jimenez, J. C., Llauca, H., Leon, K., Oria, C., Llacza, A., **Huerta, A.**., Felipe, O., Acuña, J., Rau, P., and Abad, J. (2020). ANDES: The first system for flash flood monitoring and forecasting in Peru. https://doi.org/10.5194/egusphere-egu2020-20432

Spirig, C., Gubler, S., Avalos, G., **Huerta, A.**, Imfeld, N., Lavado, W., Oria, C., Quevedo, K., Rohrer, M., Scherrer, S. C., Sedlmeier, K., and Schwierz, C. (2020). Spatio-temporal temperature and precipitation patterns in the southern Peruvian Andes—Insights from the CLIMANDES project. https://doi.org/10.5194/egusphere-egu2020-14175

Contributions to books

2018 Imfeld, N., **Huerta, A.**, and Lavado-Casimiro, W. (2018) La sequía de 1982-83 en el Altiplano / The 1982-83 drought in the Altiplano, in: Andrade, M. F., et al. (Eds). Atlas - Clima y eventos extremos del Altiplano Central perú-boliviano / Climate and extreme events from the Central Altiplano of Peru and Bolivia / 1981-2010. Geographica Bernensia, p. 74-75. https://doi.org/10.4480/GB2018.N01

2019 Rau, P., Buytaert, W., Drenkhan, F., Lavado-Casimiro, W., Montoya, N., Gianella, C., Goyburo, A., Risco, E., Cachay, W., Abad, J., Jiménez, J.C., Suarez, W., **Huerta, A.**, Baca, C., Macera, B., Bueno, M., Bonnesoeur, V. and Valdivia., G., (2019). RAHU: Implications of glacier shrinkage on future tropical Andean water security and management. I Tropical Glaciers Symposium. WEATHER: a scientific approach in Water sEcurity and climATe cHange adaptation in pEruvian glacieRs - Book of abstracts. https://app.ingemmet.gob.pe/biblioteca/pdf/TGS-I.pdf

Huerta, A., Lavado-Casimiro, W., Jiménez, J.C., (2019). Updated high-resolution grids of monthly air temperature observations - PISCOt v1.2. - Full abstract book. Scientific Symposium "The Mountains, Our Future" - - Full abstract book.

2020 Rojas, I., Suarez, W., Loarte, E., Yarleque, C., Vega, F., **Huerta, A.** and Davila, L. (2020). Glacier retreat and ocean-atmosphere interactions at King George Island - Antarctic Peninsula. Scientific Committee on Antarctic Research (SCAR) Open Science Conference 2020 - Full abstract book. ISBN: 978-0-948277-59-7

Data sets

2018 **Huerta, A.**, Aybar C., Lavado-Casimiro W. (2018). PISCOt v1.1: daily/monthly gridded air temperature from 1981-2016 at Peru scale. http://iridl.ldeo.columbia.edu/SOURCES/.SENAMHI/.HSR/.PISCO/.Temp/

2019 Aybar, C., Fernández, C., **Huerta, A.**, Lavado, W., Vega, F., and Felipe-Obando, O. (2019). PISCOp v2.1: daily/monthly gridded precipitation from 1981-2016 at Peru scale. http://iridl.ldeo.columbia.edu/SOURCES/.SENAMHI/.HSR/.PISCO/.Prec/

Huerta, A. PISCOpet v1.0: daily/monthly potential evapotranspiration from 1981-2016 at Peru scale (2019). http://iridl.ldeo.columbia.edu/SOURCES/.SENAMHI/.HSR/.PISCO/.PET/

2020 **Huerta, A.** (2020). Actual evapotranspiration at Peru scale (2003-2013). https://doi.org/10.6084/m9.figshare.13270391

Huerta, A. (2020). A gridded annual runoff dataset from 1982 to 2016 for Peru. https://doi.org/10.6084/m9.figshare.13404413

Huerta, A. (2020). Hourly gridded precipitation product in (CHI)llon, (RI)mac and (LU)rin basins (CHIRILU v2). https://doi.org/10.6084/m9.figshare.13260020

2021 **Huerta, A.**, Bonnesoeur, V., Cuadros, J., Gutierrez Lope, L. F., Ochoa-Tocachi, B., Román-Dañobeytia, F., and Lavado-Casimiro, W. (2021). PISCOeo_pm, a reference evapotranspiration gridded database based on FAO Penman-Monteith in Peru. https://doi.org/10.6084/m9.figshare.c.5633182

Huerta, A., Gutierrez Lope, L. F., Lavado-Casimiro, W., and Sabino Rojas, E. D. (2021). Atlas de zonas áridas del Perú: Una evaluación presente y futura / Atlas of aridity zones of Peru: A present and future evaluation. https://doi.org/10.6084/m9.figshare.14067035

Huerta, A. (2021). Atlas de producción de agua en el Perú: una evaluación presente y futura con énfasis en las cuencas de aporte de las EPS. https://doi.org/10.6084/m9.figshare.17162087

2022 **Huerta, A.**, Lavado-Casimiro, W., and Felipe-Obando, O. (2022). High-resolution gridded hourly precipitation dataset for Peru (PISCOp_h). https://doi.org/10.6084/m9.figshare.c.5743166

Huerta, A., Aybar, C., Imfeld N., Correa K., Felipe-Obando O., Rau, P., Drenkhan, F. and Lavado-Casimiro W. (2022). High-resolution grids of daily air temperature for Peru - the PISCOt v1.2 dataset. https://doi.org/10.6084/m9.figshare.c.5959863

Scientific activities

2021 – Review of scientific papers (e.g. International Journal of Climatology, Big Earth Data)

Theses supervised or co-supervised

Engineering degree dissertation

Jun 2019 Rivadeneira S. "Correction of precipitation estimates by GPM-IMERG satellite using merging techniques over the Chillon-Rímac-Lurin basins". National Agrarian University La Molina. Obtained excellent grades. http://repositorio.lamolina.edu.pe/handle/20.500.12996/4075

Dec 2020 Bojorquez, M. "Evaluation of the ETA/SENAMHI model during extreme snowfall events in the southern Andes of Peru". National Agrarian University La Molina. Obtained excellent grades. http://repositorio.lamolina.edu.pe/handle/20.500.12996/4701

Conferences

Jan 2015 **Huerta, A.**, and Lavado-Casimiro, W., (2015). Extremos de precipitación en la vertiente del Lago Titicaca ["Precipitation extremes on the Lake Titicaca basin"]. *In Seminar of Hydrological Studies and Research by the National Service of Peru and Hydrology - 2015*, Lima, Peru. https://www.scribd.com/document/254504358/4-HUERTA-A.

Oct 2015 **Huerta, A.**, (2015). Caracterización de extremos de precipitación en la vertiente del lago Titicaca ["Characterization of precipitation extremes in Lake Titicaca basin"]. *In 6th HYdro-geochemistry of the AMazonian Basin (HYBAM) Scientific Meeting*, Cuzco, Peru.

Sep 2017 **Huerta, A.**, (2017). Variabilidad espacio-temporal de las sequías meteorológicas: Un enfoque al sur del Perú ["Spatio-temporal variability of meteorological droughts: An approach to southern Peru"], *In "Construyendo Resiliencia Climática Agraria frente al Cambio Global en el Departamento del Cusco"*, Cusco, Peru.

Nov 2017 **Huerta, A.**, (2017). Development of a daily gridded temperature product in Peru. *In 7th HYdro-geochemistry of the AMazonian Basin (HYBAM) Scientific Meeting*, Niterói, Brazil. https://hybam.obs-mip.fr/wp-content/uploads/2018/07/5_huerta.pdf.

Apr 2018 **Huerta, A.**, (2018). Development of daily gridded precipitation and temperature in Peru. *In South America Water from Space Conference 2018*, Santiago, Chile

Jun 2018 **Huerta, A.**, (2018). Development of daily gridded temperature product in Peru: PISCOt v1.1, *In Workshop Data Management for Climate Services*, Lima, Peru.

Nov 2019 **Huerta, A.**, (2019). PISCOt: a daily and monthly gridded air temperature dataset for Peru, *In I Peruvian Congress of Meteorology*, Lima, Peru.

Jul 2020 **Huerta, A.**, (2020). Climatología y tendencias de la temperatura del aire en el (sur) Perú ["Climatology and air temperature trends in (southern) Peru"], *In I Rural and Productive Housing Symposium - Colegio de Ingenieros del Perú (CIP)*, Lima, Peru.

Aug 2022 **Huerta, A.**, (2022). PISCOeo_pm, una base de datos de evapotranspiración de referencia basada en FAO Penman-Monteith en Perú ["PISCOeo_pm, a reference evapotranspiration gridded database based on FAO Penman-Monteith in Peru"], *In RAHU 2022: glaciers, water security and adaptation to climate change*, Cusco, Peru. https://sites.google.com/utec.edu.pe/rahu-project/resultados

Extra academic training

Nov 2013 Satellite Image Interpretation. National Institute for Space Research of Brazil (INPE). 15 hours.

Nov 2013 Regional climate modelling and applications in Peru. National Service of Meteorology and Hydrology of Peru (SENAMHI). 32 hours.

Oct 2013 Hydroclimate variability and stochastic models in Hydrology. National Agrarian University La Molina (UNALM). 30 hours.

Jan 2014 GIS in water management. Gidahatari. 20 hours

Jun 2014 Coastal Meteorology. National Service of Meteorology and Hydrology of Peru (SENAMHI). 40 hours.

Oct 2014 Remote sensing applied to the hydrology of Amazon rivers. National Service of Meteorology and Hydrology of Peru (SENAMHI). 32 hours.

Nov 2014 R language programming. PROMiDAT Iberoamericano. 20 hours.

Nov 2014 Python in hydrology. Gidahatari. 20 hours

Dec 2014 Geostatistics applied to hydroclimatic variable mapping. National Service of Meteorology and Hydrology of Peru (SENAMHI). 32 hours.

Jun 2015 Quality control, homogenization, and metadata of climate data. National Service of Meteorology and Hydrology of Peru (SENAMHI). 32 hours.

Apr 2015 Introduction to SWAT. National Service of Meteorology and Hydrology of Peru (SENAMHI). 24 hours.

Jul 2015 Mountain Meteorology. National Service of Meteorology and Hydrology of Peru (SENAMHI). 40 hours.

Feb 2016 Analysis of the satellite product of precipitation GPM for the Andean region. National Service of Meteorology and Hydrology of Peru (SENAMHI) - Imperial College London. 10 hours.

Jun 2016 Responsible for the conduct of research. Andean Global Health Informatics Research and Training Center (QUIPU). 10 hours.

Jan 2017 The R Programming Environment. Johns Hopkins University - Coursera. 20 hours.

Jan 2017 Advanced R Programming. Johns Hopkins University - Coursera. 20 hours.

Feb 2017 Building R Packages. Johns Hopkins University - Coursera. 20 hours.

Mar 2017 Building Data Visualization Tools with R. Johns Hopkins University - Coursera. 20 hours.

Mar 2017 Bayesian Statistics: From Concept to Data Analysis. The University of California, Santa Cruz (UCSC) - Coursera. 20 hours.

Oct 2017 Climate Data Rescue. National Service of Meteorology and Hydrology of Peru (SENAMHI). 40 hours.

Aug 2018 Hydrological Model: MGB Large-scale Model. Federal University of Rio Grande do Sul (UFRGS). 24 hours.

Oct 2018 Geophysical data processing and analysis using Python 3. National Service of Meteorology and Hydrology of Peru (SENAMHI). 50 hours.

May 2019 Python for Data Science and Machine Learning Bootcamp. UDEMY. 50 hours.

Oct 2020 Training in Radar Precipitation Estimation and Monitoring. Geophysical Institute of Peru (IGP) and Pontifical Catholic University of Peru (PUCP). 24 hours.

Jan 2021 Basic Epidemiology for Health Institutions. The University of Chile. 27 hours.

Jan 2021 Environmental exposures and cancer: epidemiological evidence. The University of Chile. 27 hours.

Sep 2022 – Machine Learning Specialization. Stanford University, DeepLearning.AI - Coursera.

Computer skills

Basic	MATLAB, Julia, GrADS, CDO, hydraccess, CPT
Intermediate	PYTHON, Google Earth Engine, QGIS, GNU/Linux, Microsoft Windows,
Advanced	R, LaTeX

Languages

Spanish	**Native Speaker**
English	**Fluent**
German	**Beginner's level**

Online resources

ORCID	**https://orcid.org/0000-0002-2415-3402**
Researchgate	**https://www.researchgate.net/profile/Adrian-Huerta**
Google Scholar	**https://scholar.google.com/citations?user=c-jCUi8AAAAJ&h**
Figshare	**https://figshare.com/authors/Adrian_Huerta/9661634**
Web of Science	**https://www.webofscience.com/wos/author/record/2347043**
Sci Profiles	**https://sciprofiles.com/profile/adrhuerta**