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Education

- Massachusetts Institute of Technology (MIT) (2005-2008)** *Cambridge, MA, U.S.A.*
Sc.D. in Civil and Environmental Engineering, December 2008.
Thesis title: *Extreme Rainfall Intensities and Long-term Rainfall Risk from Tropical Cyclones*
GPA: 5.0/5.0
- Massachusetts Institute of Technology (MIT) (2003-2005)** *Cambridge, MA, U.S.A.*
M.Sc. in Civil and Environmental Engineering, February 2005.
Thesis title: *The Areal Reduction Factor: A Multifractal Analysis*
GPA: 5.0/5.0
- National Technical University of Athens (NTUA) (1999-2003)** *Athens, Greece*
Diploma in Civil Engineering (5-year degree), July 2003
Department of Civil Engineering
Water Resources, Hydraulic & Maritime Engineering Track
GPA: 9.66/10 (Record high in the Department of Civil Engineering of NTUA)
- University of Patras, School of Engineering (1998-1999)** *Patras, Greece*
Department of Civil Engineering,
Partial GPA: 9.17/10 (Best performance in the Department of Civil Engineering)
- Zannio Pilot Gymnasium and Lyceum (1992-1998)** *Piraeus, Greece*
Greek Apolytirion, GPA: 19.3/20 (Ranked first in the class of 1998)

Expertise: *Stochastic modeling of hydroclimatic and environmental processes, and engineered systems, for probabilistic risk assessment, prediction, and risk-benefit analysis and design.*

Distinctions/Fellowships/Awards:

- (2018) Certificate of Outstanding Contribution in Reviewing, Stochastic Environmental Research and Risk Assessment (SERRA)
(2017) Nomination of the status of Associate Professor at INRS Université de Recherche in Quebec, Canada.
(2017) Certificate of Outstanding Contribution in Reviewing, Journal of Hydrology (JoH)
(2017) Article receiving Editors' Highlight in Water Resources Research (WRR)
(2015-2017) 2-year Research Fellowship by Alexander S. Onassis Public Benefit Foundation
(2012-2015) 3-year Postdoctoral Fellowship by the General Secretariat of Research & Technology (Greece)
(2004-2009) 5-year Graduate Fellowship by Alexander S. Onassis Public Benefit Foundation
(2003-2004) Schoettler Fellowship (Massachusetts Institute of Technology, M.I.T.)
(2007) Best paper award at the 1st International Summit on Hurricanes and Climate Change
(1999-2008) 27 Academic Awards in Civil and Environmental Engineering
(1998-2003) State Scholarships Foundation (Greece)
(1998) Participation at the XXIX International Physics Olympiad

Academic Experience:

- (Oct. 2017 - present) Adjunct Professor in the thematic area "*Design of Civil Infrastructure and Environmental Protection*", School of Science and Technology, Hellenic Open University, Patras, Greece.
(Sep. 2017 - present) Professeur Associé in the area of Stochastic Hydrology, INRS Université de Recherche in Quebec, Canada.
(Mar. 2015 - present) Assistant Professor in the area of Engineering Hydrology, Hydraulics and Hydrologic Risk Assessment, Department of Civil Engineering, University of Patras, Greece
(Feb. 2014 - Mar. 2015) Lecturer in the area of Engineering Hydrology, Hydraulics and Hydrologic Risk Assessment, Department of Civil Engineering, University of Patras, Greece
(Feb. 2013 - Sep. 2013) Adjunct Professor (Water Distribution and Sewage Networks), Department of Civil Engineering, University of Patras, Greece
(Jan. 2012 - Jan. 2013) Postdoctoral Research Associate (Probabilistic Risk Assessment, Engineering & Environmental Design and Prediction), Dipartimento di Ingegneria Civile, Ambientale e Architettura, University of Cagliari, Italy
(Apr. 2011 - Feb. 2014) Postdoctoral Research Associate (Probabilistic Risk Assessment, Engineering & Environmental Design and Prediction), Department of Civil Engineering, University of Patras, Greece
(Oct. 2010-Feb. 2014) Elected Lecturer (pending appointment), Department of Civil Engineering, University of Patras, Greece
(2009-2010) Adjunct Professor (Numerical Methods in Environmental Engineering), Technical University of Crete, Greece
(2008-2009) Postdoctoral Research Associate (Hydrologic Risk Assessment and Prediction), MIT
(2003-2008) Research Assistant (Hydrologic Risk Assessment and Prediction), MIT
(2005-2008) Teaching Assistant (Probability and Statistics in Civil and Environmental Engineering), MIT

Professional Experience:

- (2011- present) Consultant of the Technical Chamber of Greece (TCG), in Technical Issues and International Affairs
(2009-present) Senior Civil Engineer, *A&M LANGOUSIS Development-Supervision-Constructions* (www.langousis.gr)
(2010-2011) Consultant Civil and Environmental Engineer, *Special Secretariat for Water*, Greece
(2009 -2010) Military Service, Greek Navy.
(1999-2003) Trainee Civil Engineer, *Chorodomiki* Construction Company, Greece

Professional Memberships:

Technical Chamber of Greece (T.C.G.)
European Geosciences Union (E.G.U.)
American Geophysical Union (A.G.U.)
American Society of Civil Engineers (A.S.C.E.)
International Association of Hydrological Sciences (I.A.H.S.)
International Commission on Statistical Hydrology (ICSH-IAHS)

Editorial Boards:

- *Associate Editor*: Water Resources Research (WRR), (2013- present).
- *Associate Editor*: Stochastic Environmental Research and Risk Assessment (SERRA), (2013- present).
- *Associate Editor*: Journal of Hydrology (JoH), (2016- present).
- *Associate Editor*: Journal of Hydrological Sciences (JHS), (2016- present).
- *Managing Guest Editor*: Journal of Hydrology (JoH), Special Issue: "Precipitation measurement and modeling: uncertainty, variability, observations, ensemble simulation and downscaling" (2015 – 2017).
- *Guest Associate Editor*: Hydrology and Earth System Sciences (HESS), Special Issue: Precipitation uncertainty and variability: observations, ensemble simulation and downscaling (2012-2013).

Peer Review Referee Work (more than 400 articles have been reviewed for):

Water Resources Research, Journal of Hydrology,
Hydrological Sciences Journal, Advances in Water Resources,
Journal of Atmospheric Research, Urban Water Journal,
International Journal of Forecasting, Advances in Geosciences,
International Journal of Climatology, Hydrological Processes,
Hydrology and Earth System Sciences (HESS),
Natural Hazards and Earth Systems Sciences (NHES),
Stochastic Env. Research and Risk Assessment (SERRA)
Water Resources Management, Hydrology,
Journal of Applied Meteorology and Climatology,
International Journal of Modern Physics B, Annals of Applied Statistics
CATENA, Journal of Atmospheric Sciences

Scientific and Professional Committees:

- Chair of the Precipitation and Climate Sub-Division of the European Geosciences Union (EGU), (2018-present).
- Participation to Tenure, Promotion and Distinguished Chair Committees world-wide (2016 – present).
- Participation to Committees of Funding Agencies world-wide (2016 – present).
- Member of the examination committee of the Technical Chamber of Greece (TCG), for the conferment of professional rights to Civil Engineers (2014-present).
- Member of the scientific committee of the Precipitation and Climate Sub-Division of the European Geosciences Union (EGU), (2008-present).

Professional Bodies and Community Involvement:

- Board of Directors, Treasurer, Alexander S. Onassis Scholar's Association (2011-2013).
- Board of Directors, American Society of Civil Engineers (ASCE), Hellenic International Group (2010-2012).
- Student Mentor: Massachusetts Institute of Technology (MIT) International Mentorship Program (2016-present).
- Educational Councilor: Massachusetts Institute of Technology (MIT) (2018-present).

Administrative Activities:

- Chair of the Organization Committee of Seminars and Invited Lecture Series of the Department of Civil Engineering at the University of Patras (2018 – present).
- Member of the Search Committee for Adjunct Faculty of the Department of Civil Engineering at the University of Patras (2016 – present).
- Member of the Organization Committee of Seminars and Invited Lecture Series of the Department of Civil Engineering at the University of Patras (2016 – present).
- Member of the General Assembly on Academic Affairs of the Department of Civil Engineering at the University of Patras (2014 – present).
- Member of the General Assembly of the Department of Civil Engineering at the University of Patras (2014 – present).
- Member of the Committee for Students' Practical Training of the Department of Civil Engineering at the University of Patras (2016 – 2018).

- Member of the ERASMUS+ Committee of the Department of Civil Engineering at the University of Patras (2015 – 2018)

Organization of Conferences and Conference Sessions:

- Assemblies/Conferences: 23 (EGU, JSM, IAHS, IAMG, HYDROFRACTALS, LEONARDO etc.)
 - Session Convenerships: 9
 - Session Co-Convenerships: 35
 - Participation to Conference Scientific Committees: 48
 - Participation to Conference Organizing Committees : 4
- Chair of the Scientific Committee and Co-Convenor: Water, Climate, Food and Health (HS7.3/CL/ERE/NH/NP), European Geosciences Union, Vienna, Austria, 2020.
 - Chair of the Scientific Committee and Co-Convenor: Precipitation Modelling: uncertainty, variability, assimilation, ensemble simulation and downscaling (HS7.2/AS/CL/NH/NP), European Geosciences Union, Vienna, Austria, 2020.
 - Chair of the Scientific Committee and Co-Convenor: Water, Climate, Food and Health (HS7.3/CL4.41/ERE8.7/NH1.21/NP9.5), European Geosciences Union, Vienna, Austria, 2019.
 - Chair of the Scientific Committee and Co-Convenor: Precipitation Modelling: uncertainty, variability, assimilation, ensemble simulation and downscaling (HS7.2/AS1.33/CL2.09/NH1.22/NP5.7), European Geosciences Union, Vienna, Austria, 2019.
 - Member of the Scientific and Organizing Committees: Hydrofractals 2018, Ovidius University of Constanta, Constanta, Romania, 21-23 June 2018 (<http://revista-constructii.univ-ovidius.ro/conferinte/index.php/hydrofractals-18>).
 - Member of the Scientific Committee and Convenor: Precipitation Modelling: uncertainty, variability, assimilation, ensemble simulation and downscaling (HS7.2/AS1.17/CL2.06/NH1.17/NP5.4), European Geosciences Union, Vienna, Austria, 2018.
 - Member of the Scientific Committee and Co-Convenor: Precipitation measurement: techniques, processes and hydrological applications at the catchment scale (HS7.1/AS1.18/NP3.3), European Geosciences Union, Vienna, Austria, 2018.
 - Member of the Scientific Committee and Co-Convenor: Hydroclimatic and hydrometeorologic stochastic: Extremes, scales, probabilities (HS7.7/NH1.18), European Geosciences Union, Vienna, Austria, 2018.
 - Member of the Scientific Committee and Co-Convenor: Water, climate, food and health (HS7.3/CL2.19/ERE2.5/NH1.16/NP9.1), European Geosciences Union, Vienna, Austria, 2018.
 - Member of the Scientific Committee and Convenor: Precipitation: from Measurement to Modeling and Application in Catchment Hydrology (HS7.1/AS1.11/NH1.15/NP10.11), European Geosciences Union, Vienna, Austria, 2017.
 - Member of the Scientific Committee and Co-Convenor: Precipitation Uncertainty and Variability: Observations, Ensemble Simulation and Downscaling (HS7.2/AS1.9/CL2.15/NH1.14/NP10.1), European Geosciences Union, Vienna, Austria, 2017.
 - Member of the Scientific Committee and Co-Convenor: Water, Climate and Health (HS7.3), European Geosciences Union, Vienna, Austria, 2017.- Member of the Scientific Committee and Co-Convenor: Hydroclimatic and hydrometeorologic stochastic: Extremes, scales, probabilities (HS7.7/NH1.17), European Geosciences Union, Vienna, Austria, 2017.
 - Member of the Scientific Committee and Co-Convenor: Stochastic hydrology: simulation and disaggregation models (Session 24), IAHS Scientific Assembly 2017, Port Elizabeth, South Africa, 2017.
 - Member of the Scientific Committee and Convenor: Precipitation: from Measurement to Modeling and Application in Catchment Hydrology (HS7.1), European Geosciences Union, Vienna, Austria, 2016.
 - Member of the Scientific Committee and Co-Convenor: Precipitation Uncertainty and Variability: Observations, Ensemble Simulation and Downscaling (HS7.2), European Geosciences Union, Vienna, Austria, 2016.
 - Member of the Scientific Committee and Co-Convenor: Water, Climate and Health (HS7.3), European Geosciences Union, Vienna, Austria, 2016.
 - Member of the Scientific Committee and Co-Convenor: Precipitation Variability: Spatio-temporal Scales and Hydrometeorologic Extremes (HS7.9/AS1.30/CL2.21/NH1.12/NP3.8), European Geosciences Union, Vienna, Austria, 2016.
 - Member of the Scientific Committee: International Conference on Natural Hazards and Infrastructure (ICONHIC), Chania, Crete Island, Greece, 28-30 June 2016, <http://iconhic2016.com/>.
 - Member of the Scientific Committee and Co-Convenor: Multi-Sourced Data Modelling In Conditions of Uncertainty, Spatial Statistics: Emerging Patterns, Avignon, France, 09-12 June, 2015.
 - Member of the Scientific Committee and Convenor: Precipitation: from Measurement to Modelling and Application in Catchment Hydrology (HS7.1/AS1.11/NH1.7/NP9.4), European Geosciences Union, Vienna, Austria, 2015.
 - Member of the Scientific Committee and Co-Convenor: Precipitation Uncertainty and Variability: Observations, Ensemble Simulation and Downscaling (HS7.2/AS1.12/CL2.10/NH1.5/NP3.7), European Geosciences Union, Vienna, Austria, 2015.
 - Member of the Scientific Committee and Co-Convenor: Water, Climate and Health (HS7.3/CL2.9/NP9.3), European Geosciences Union, Vienna, Austria, 2015.
 - Member of the Scientific Committee and Co-Convenor: Extremes in hydrometeorology: Scales, intensities, probabilities (HS7.7/NP3.8), European Geosciences Union, Vienna, Austria, 2015.
 - Member of the Scientific Committee and Convenor: Precipitation: from Measurement to Modelling and Application in Catchment Hydrology (HS7.1/AS1.9/NH1.12/NP3.9), European Geosciences Union, Vienna, Austria, 2014.
 - Member of the Scientific Committee and Co-Convenor: Precipitation Uncertainty and Variability: Observations, Ensemble Simulation and Downscaling (HS7.2/AS1.10/CL3.7/NH1.13/NP3.10), European Geosciences Union, Vienna, Austria, 2014.
 - Member of the Scientific Committee and Co-Convenor: Scaling and extremes in hydrology (HS7.7/NH1.14/NP3.7), European Geosciences Union, Vienna, Austria, 2014.
 - Member of the Scientific Committee and Co-Convenor: Water, Climate and Health (HS7.3/CL3.6/NP1.4), European Geosciences Union, Vienna, Austria, 2014.
 - Member of the Scientific Committee and Co-Convenor: 16th IAMG Conference - Geostatistical and Geospatial Approaches for the Characterization of Natural Resources in the Environment: Challenges, Processes and Strategies, New Delhi, India, 2014.

- Member of the Scientific and Organizing Committees: Facets of Uncertainty: 5th EGU Leonardo Conference, Hydrofractals 2013, and IAHS Statistical Hydrology (STAHY) Workshop 2013 (joint event), Kos Island, Greece, 17–19 October 2013 (<http://kos2013.org>).
- Member of the Scientific Committee and Co-Convener: International Perspectives in Advanced Methodologies for Spatiotemporal Information Processing (289), Joint Statistical Meetings (JSM), Montreal, Quebec, Canada, 2013.
- Member of the Scientific Committee and Convener: Precipitation: from Measurement to Modelling and Application in Catchment Hydrology (HS7.1/AS1.5), European Geosciences Union, Vienna, Austria, 2013.
- Member of the Scientific Committee and Co-Convener: Precipitation Uncertainty and Variability: Observations, Ensemble Simulation and Downscaling (HS7.2/AS1.6/CL5.13/NP3.8), European Geosciences Union, Vienna, Austria, 2013.
- Member of the Scientific Committee and Co-Convener: Geophysical Extremes: Scaling Representations and their Applications (NP3.2), European Geosciences Union, Vienna, Austria, 2013.
- Member of the Scientific Committee and Co-Convener: Water, Climate and Health (HS7.3/CL2.12/NP1.6), European Geosciences Union, Vienna, Austria, 2013.
- Member of the Scientific Committee and Co-Convener: 2nd Common Conference H.H.U. – H.C.W.M. on Integrated Water Resources Management for Sustainable Development, University of Patras, Patras, Greece, October 2012.
- Member of the Scientific Committee and Co-Convener: Predictive Methodologies and Analysis of Spatiotemporal Data in Environmental Research (207789), Joint Statistical Meetings (JSM), San Diego, USA, 2012.
- Member of the Scientific Committee and Convener: Climate, Water and Health (HS7.3/CL2.9/NP1.3), European Geosciences Union, Vienna, Austria, 2012.
- Member of the Scientific Committee and Co-Convener: Precipitation: from Measurement to Modelling and Application in Catchment Hydrology (HS7.1), European Geosciences Union, Vienna, Austria, 2012.
- Member of the Scientific Committee and Co-Convener: Precipitation Uncertainty and Variability: Observations, Ensemble Simulation and Downscaling (HS7.2/AS1.19/CL5.15/NH1.11/NP3.6), European Geosciences Union, Vienna, Austria, 2012.
- Member of the Scientific Committee and Co-Convener: Geophysical Extremes: Scaling Representations and their Applications (NP3.2), European Geosciences Union, Vienna, Austria, 2012.
- Member of the Scientific Committee and Co-Convener: Methodological Research and Uncertainty Study in the Environment, Spatio-Temporal Analysis (206510), Joint Statistical Meetings (JSM), Miami, USA, 2011
- Member of the Scientific Committee and Convener: Climate, Water and Health (HS7.3/CL3.7/NP1.4), European Geosciences Union, Vienna, Austria, 2011.
- Member of the Scientific Committee and Co-Convener: Nonlinearity, Scaling and Complexity in the Atmosphere, Ocean and the Climate System (NP3.1), European Geosciences Union, Vienna, Austria, 2011- Member of the Scientific Committee and Co-Convener: Precipitation: from Measurement to Modelling and Application in Catchment Hydrology (HS7.1/AS4.8/NH1.10/NP3.9), European Geosciences Union, Vienna, Austria, 2011.
- Member of the Scientific Committee and Convener: Geophysical Extremes: Scaling Representations and their Applications (NP3.4), European Geosciences Union, Vienna, Austria, 2010.
- Member of the Scientific Committee and Co-Convener: Ensemble Representations of Uncertainty in Precipitation Observation, Analysis and Forecasting (HS5.2/AS1.21/NH1.14), European Geosciences Union, Vienna, Austria, 2010.
- Member of the Scientific Committee and Co-Convener: Geophysical Extremes: Scaling Representations and their Applications (NP3.4), European Geosciences Union, Vienna, Austria, 2009.
- Member of the Scientific Committee and Co-Convener: Geophysical Extremes: Scaling versus Nonstationarity (IS40 - NP3.04/HS1.8/NH10.5), European Geosciences Union, Vienna, Austria, 2008.

Published Work – Student Supervision - Bibliometrics (as of 06 October, 2019):

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| - Dissertations: 3 | - Invited Talks and Lectures: 17 |
| - Research Articles in Peer-Reviewed Scientific Journals: 30 | - h-index (Google-Scholar): 18 |
| - Peer-Reviewed Articles in Conference Proceedings: 2 | - Citations (Google-Scholar): 886 |
| - Peer-Reviewed Invited Book Chapters: 3 | - Supervision of Diploma Theses in Civil Engineering: 21 |
| - Conference Presentations: 47 | - Supervision of Postgraduate Theses: 9 |
| - Lecture Notes: 2 | - Supervision of Doctoral Theses: 2 |
| - Popular Science: 6 | - Participation to Doctoral committees: 11 |
| - Technical Reports: 4 | - Participation to Tenure, Promotion and Distinguished Chair Committees: 2 |

Journal Articles:

- Papacharalampous, G., H. Tyralis, A. Langousis, A.W. Jayawardena, B. Sivakumar, N. Mamassis, A. Montanari, and D. Koutsoyiannis (2019) Probabilistic hydrological post-processing at scale: Why and how to apply machine-learning quantile regression algorithms, *Water*, (accepted).
- Tyralis, H., G. Papacharalampous, A. Burnetas and A. Langousis (2019) Hydrological post-processing using stacked generalization of quantile regression algorithms: Large-scale application over CONUS, *J. Hydrol.*, **577**, doi:10.1016/j.jhydrol.2019.123957 ([active link](#)).
- Tyralis, H., G. Papacharalampous and A. Langousis (2019) A Brief Review of Random Forests for Water Scientists and Practitioners and Their Recent History in Water Resources, *Water*, **11**(5), 910, doi:10.3390/w11050910, ([active link](#)).
- Fei, X., R. Xiao, G. Christakos, A. Langousis, Z. Ren, Y. Tian and X. Lv (2019) Comprehensive assessment and source apportionment of heavy metals in Shanghai agricultural soils with different fertility levels, *Ecological Indicators*, **106**, 105508, <https://doi.org/10.1016/j.ecolind.2019.105508>, ([active link](#)).

- He, J., G. Christakos, J. Wu, P. Jankowski, A. Langousis, Y. Wang, W. Yin and W. Zhang (2019) Probabilistic Logic Analysis of the Highly Heterogeneous Spatiotemporal HFRS Incidence Distribution in Heilongjiang Province (China) During 2005-2013, *PLoS Negl. Trop. Dis.*, **13**(1), e0007091, <https://doi.org/10.1371/journal.pntd.0007091> (active link).
- Tyralis, H. and A. Langousis (2019) Estimation of intensity–duration–frequency curves using max-stable processes, *Stoch. Environ. Res. Risk Assess.*, **33**(1), 239-252, <https://doi.org/10.1007/s00477-018-1577-2> (active link).
- Langousis, A., V. Kaleris, A. Kokosi and G. Mamounakis (2018) Markov based transition probability geostatistics in groundwater applications: assumptions and limitations, *Stoch. Environ. Res. Risk Assess.*, **32**(7), 2129-2146, doi: <https://doi.org/10.1007/s00477-017-1504-y> (active link).
- Langousis, A., R. Deidda, A. Carsteanu, C. Onof, P. Burlando, R. Uijlenhoet and A. Bárdossy (2018) Precipitation measurement and modelling: uncertainty, variability, observations, ensemble simulation and downscaling, *J. Hydrol.*, **556**, 824-26, <https://doi.org/10.1016/j.jhydrol.2017.09.016> (active link).
- Emmanouil, S. and A. Langousis (2017) UPStream: Automated Hydraulic Design of Pressurized Water Distribution Networks, *SoftwareX*, **6**, 248-254, <https://doi.org/10.1016/j.softx.2017.09.001> (active link).
- Mamalakis, A., A. Langousis, R. Deidda and M. Marrocu (2017) A parametric approach for simultaneous bias correction and high-resolution downscaling of climate model rainfall, *Water Resour. Res.*, **53**, WRCR22499, doi: 10.1002/2016WR019578 (active link) (WRR Editors' Highlight).
- Kaleris, V. and A. Langousis (2017) Comparison of two rainfall-runoff models: Effects of conceptualization, model calibration and parameter variability, *Hydrological Sciences Journal*, **62**(5), 729-748, doi: 10.1080/02626667.2016.1250899 (active link).
- Langousis, A., A. Mamalakis, M. Puliga and R. Deidda (2016) Threshold detection for the generalized Pareto distribution: Review of representative methods and application to the NOAA NCDC daily rainfall database, *Water Resour. Res.*, **52**, doi:10.1002/2015WR018502 (active link).
- Langousis, A., A. Mamalakis, R. Deidda and M. Marrocu (2016) Assessing the relative effectiveness of statistical downscaling and distribution mapping in reproducing rainfall statistics based on climate model results, *Water Resour. Res.*, **52**, doi:10.1002/2015WR017556 (active link).
- Langousis, A. and V. Kaleris (2014) Statistical framework to simulate daily rainfall series conditional on upper-air predictor variables, *Water Resour. Res.*, **50**(5), 3907-3932, doi: 10.1002/2013WR014936 (active link).
- Deidda, R., M. Marrocu, G. Caroletti, G. Pusceddu, A. Langousis, V. Lucarini, M. Puliga, and A. Speranza (2013) Regional climate models' performance in representing precipitation and temperature over selected Mediterranean areas, *Hydrol. Earth Syst. Sci.*, **17**(12), 5041-5059, doi:10.5194/hess-17-5041-2013 (active link).
- Angulo, J.M., H.-L. Yu, A. Langousis, A. Kolovos, J-F Wang, D. Madrid and G. Christakos (2013) Spatiotemporal infectious disease modeling: A BME-SIR approach, *PLoS ONE* **8**(9), e72168. doi:10.1371/journal.pone.0072168 (active link).
- Langousis, A. and V. Kaleris (2013) Theoretical framework to estimate spatial rainfall averages conditional on river discharges and point rainfall measurements from a single location: an application to western Greece, *Hydrol. Earth Syst. Sci.*, **17**, 1241-1263, doi:10.5194/hess-17-1241-2013. (active link)
- Langousis, A., A.A. Carsteanu and R. Deidda (2013) A Simple Approximation to Multifractal Rainfall Maxima using a Generalized Extreme Value Distribution Model, *Stoch. Environ. Res. Risk Assess.*, doi: 10.1007/s00477-013-0687-0. (active link)
- Angulo, J.M., H.-L. Yu, A. Langousis, D. Madrid and G. Christakos (2012) Modeling of Space–time Infectious Disease Spread under Conditions of Uncertainty, *International Journal of Geographical Information Science*, **26**(10), 1751-1772, doi:10.1080/13658816.2011.648642, (active link).
- Veneziano, D., A. Langousis and C. Lepore (2009) New Asymptotic and Pre-Asymptotic Results on Rainfall Maxima from Multifractal Theory, *Wat. Resour. Res.*, **45**, doi:10.1029/2009WR008257. (active link)
- Langousis, A. and D. Veneziano (2009) Long-term Rainfall Risk from Tropical Cyclones in Coastal Areas, *Wat. Resour. Res.*, **45**, doi:10.1029/2008WR007624. (active link)
- Langousis, A. and D. Veneziano (2009) Theoretical Model of Rainfall in Tropical Cyclones for the Assessment of Long-term Risk, *J. Geophys. Res.*, **114**, doi:10.1029/2008JD010080. (active link)
- Langousis, A., D. Veneziano, P. Furcolo, and C. Lepore (2009) Multifractal Rainfall Extremes: Theoretical Analysis and Practical Estimation, *Chaos Solitons and Fractals*, **39**, 1182-1194, doi:10.1016/j.chaos.2007.06.004. (active link)
- Koutsoyiannis, D., C. Makropoulos, A. Langousis, S. Baki, A. Efstratiadis, A. Christofides, G. Karavokiros and N. Mamassis (2009) Climate, Hydrology, Energy, Water: Recognizing Uncertainty and Seeking Sustainability, *Hydrol. Earth Syst. Sci.*, **13**, 247-257. (active link)
- Langousis, A. and D. Veneziano (2007) Intensity-Duration-Frequency Curves from Scaling Representations of Rainfall, *Wat. Resour. Res.*, **43**, doi: 10.1029/2006WR005245. (active link)
- Veneziano, D., C. Lepore, A. Langousis, and P. Furcolo (2007) Marginal Methods of Intensity-duration-frequency Estimation in Scaling and Non-scaling Rainfall, *Wat. Resour. Res.*, **43**, doi:10.1029/2007WR006040. (active link)
- Veneziano, D., A. Langousis, and P. Furcolo (2006) Multifractality and Rainfall Extremes: A Review, *Wat. Resour. Res.*, **42**, doi:10.1029/2005WR004716. (active link)
- Langousis, A. and D. Koutsoyiannis (2006) A Stochastic Methodology for Generation of Seasonal Time Series Reproducing Over-year Scaling Behavior, *J. Hydrol.*, **322** (1-4), 138-154. (active link)
- Veneziano, D. and A. Langousis (2005) The Maximum of Multifractal Cascades: Exact Distribution and Approximations, *Fractals*, **13**(4), 311-324. (active link)
- Veneziano, D. and A. Langousis (2005) The Areal Reduction Factor a Multifractal Analysis, *Wat. Resour. Res.*, **41**, doi:10.1029/2004WR003765. (active link)

Conference Proceedings:

- Mamalakis, A., A. Langousis and R. Deidda (2016) Threshold Detection for the Generalized Pareto (GP) Distribution: Critical Review and Hydrologic Application of Representative Methods, In: Castellarin, A. et al. (2016) Atti del XXXV Convegno Nazionale di Idraulica e Costruzioni Idrauliche. Bologna: DICAM - Universita di Bologna, p. 1499. ISBN 9788898010400. DOI 10.6092/unibo/amsacta/5400, p.423-426.
- Langousis, A. and V. Kaleris (2012) A Statistical Approach to Estimate Spatial Rainfall Averages Using Point Rainfall Measurements from a Single Location and Runoff Data, 2nd Common Conference H.H.U. – H.C.W.M. on Integrated Water Resources Management for Sustainable Development, University of Patras, Patras, Greece, October 2012.

Dissertations:

- Langousis, A. (2008) *Extreme Rainfall Intensities and Long-term Rainfall Risk from Tropical Cyclones*, Sc.D. Thesis, Department of Civil and Environmental Engineering, MIT, Cambridge, MA, U.S.A. ([active link](#))
- Langousis, A. (2005) *The Areal Reduction Factor a Multifractal Analysis*, MSc Thesis, 117 pages, Department of Civil and Env. Eng., MIT, Cambridge, MA, U.S.A. ([active link](#))
- Langousis, A. (2003) *Development of Cyclostationary Stochastic Hydrological Models Preserving Short-term Memory and Long-term Persistence*, Diploma thesis, 327 pages, Department of Water Resources, Hydraulic and Maritime Engineering - National Technical University of Athens, Greece. ([active link](#))

Books (Chapters in):

- Koutsoyiannis, D. and A. Langousis (2011) Precipitation, In: *Treaties on Water Sciences: Hydrology*, Vol. 2, Edts: P. Wilderer (in chief) and S. Uhlenbrook, Academic Press, Oxford, pp. 27–78. ([active link](#))
- Veneziano D. and A. Langousis (2010) Scaling and Fractals in Hydrology, In: *Advances in Data-based Approaches for Hydrologic Modeling and Forecasting*, Edited by: B. Sivakumar and R. Berndtsson, World Scientific, 145p. ([active link](#))
- Langousis, A., D. Veneziano, and S. Chen (2008) Boundary Layer Model for Moving Tropical Cyclones, In: *Hurricanes and Climate Change*, Edts. J. Elsner and T. Jagger, Springer, NY, doi: 10.1007/978-0-387-09410-6, pp. 265-286. ([active link](#))

Conference Presentations:

- Emmanouil, S., E.I. Nikolopoulos, A. Langousis and E.N. Anagnostou (2019) Statistical downscaling of Global Reanalysis Precipitation Products: A comparison of parametric and non-parametric approaches over CONUS, European Geosciences Union General Assembly, Vienna, Austria, April 2019.
- Perra, E., F. Viola, R. Deidda, D. Caracciolo, A. Langousis and C. Paniconi (2019) Investigating the effect of different downscaling techniques on the simulated hydrologic cycle of a Mediterranean catchment, European Geosciences Union General Assembly, Vienna, Austria, April 2019.
- Tyralis, H., G. Papacharalampous, A. Burnetas and A. Langousis (2019) Stacking of probabilistic predictions for improving hydrological forecasts, European Geosciences Union General Assembly, Vienna, Austria, April 2019.
- Papacharalampous, G., H. Tyralis, A. Langousis, A.W. Jayawardena, B. Sivakumar, N. Mamassis, A. Montanari and D. Koutsoyiannis (2019) Large-scale comparison of machine learning regression algorithms for probabilistic hydrological modelling via post-processing of point predictions, European Geosciences Union General Assembly, Vienna, Austria, April 2019.
- Hu, L., A. Langousis, E.I. Nikolopoulos and E.N. Anagnostou (2018) High-resolution Statistical Downscaling of Global Reanalysis Precipitation Using Multi-Radar/Multi-Sensor (MRMS) Rainfall Estimates – Evaluation over CONUS, AGU: 2018 Fall Meeting, Washington D.C., USA, 10-14 Dec. 2018.
- Langousis, A., E.I. Nikolopoulos and E.N. Anagnostou (2018) Using approximations from multifractal theory to estimate IDF curves at ungauged locations, 11th International Workshop on Precipitation in Urban Areas (UrbanRain18), Pontresina, Switzerland, 5-7 Dec. 2018.
- Carsteanu, A.A. and A. Langousis (2018) Low-order moment characterization of stable motions: The AR(1) case, Hydrofractals 2018, Ovidius University of Constanta, Constanta, Romania, 21-23 June 2018 (<http://revista-constructii.univ-ovidius.ro/conferinte/index.php/hydrofractals-18>).
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- Deidda, R., M. Hellies and A. Langousis (2016) Estimation of Extreme Daily Precipitation: Comparison between Regional and Geostatistical Approaches, European Geosciences Union General Assembly, Vienna, Austria, April 2016.
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- Deidda, R., M. Hellies and A. Langousis (2015) Comparison of Regional and Geostatistical Approaches for the Estimation of Extreme Daily Precipitation, Giornate dell'Idrologia della Società Idrologica Italiana Arcavacata di Rende (Cosenza), November 2014.
- Langousis, A., R. Deidda, M. Marrocu and V. Kaleris (2014) Rainfall Downscaling Conditional on Upper-air Variables: Assessing Rainfall Statistics in a Changing Climate, European Geosciences Union General Assembly, Vienna, Austria, April-May 2014.
- Kaleris, V. and A. Langousis (2014) Case Study for the Identification and Evaluation of Rainfall-runoff Models, European Geosciences Union General Assembly, Vienna, Austria, April-May 2014.
- Langousis, A. and V. Kaleris (2013) Modeling Daily Rainfall Occurrence and Amount Conditional on Atmospheric Predictors, Facets of Uncertainty: 5th EGU Leonardo Conference, Hydrofractals 2013, and IAHS Statistical Hydrology (STAHY) Workshop 2013 (<http://kos2013.org>), Kos Island, Greece, 17-19 October 2013.
- Carsteanu, A., A. Langousis and R. Deidda (2013) The Distribution of Interarrival Times and Runlengths in Multifractal Rainfall, Facets of Uncertainty: 5th EGU Leonardo Conference, Hydrofractals 2013, and IAHS Statistica l Hydrology (STAHY) Workshop 2013 (<http://kos2013.org>), Kos Island, Greece, 17-19 October 2013.
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- Deidda, R., M. Marrocu, G. Pusceddu, A. Langousis, G. Mascaro and G. Caroletti (2013) Downscaling of RCM outputs for representative catchments in the Mediterranean region, for the 1951-2100 time-frame, European Geosciences Union General Assembly, Vienna, Austria, April 2013.
- Langousis, A. and V. Kaleris (2012) A Statistical Approach to Resolve Incompatibilities Between Measured Runoff Data and Daily Estimates of Spatially Averaged Rainfall, European Geosciences Union General Assembly, Vienna, Austria, April 2012.
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- Langousis, A. and D. Veneziano (2008) Rainfall Hazard from Tropical Cyclones, *Geophysical Research Abstracts*, Vol. 10, European Geosciences Union General Assembly, Vienna, Austria, April 2008.
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- Lepore, C., M. I. P. de Lima, D. Veneziano, A. Langousis and J.L.M.P. de Lima (2008) Statistical Characterization of Extreme Rainfall Climate along the Future High-speed Rail Track in Portugal, *Geophysical Research Abstracts*, Vol. 10, European Geosciences Union General Assembly, Vienna, Austria, April 2008.
- Veneziano, D., C. Lepore, A. Langousis and P. Furcolo (2007) Comparison of IDF Estimation Methods, 9th International Precipitation Conference, Université Paris Est/Ecole Nationale des Ponts et Chaussées, France, November 12-14, 2007.
- Langousis, A., D. Veneziano, and S. Chen (2007) Theoretical Estimation of the Mean Rainfall Field in Tropical Cyclones: Axisymmetric Component and Asymmetry Due to Motion, 1st International Summit on Hurricanes and Climate Change, Crete, Hellas, June 2007.

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- Langousis, A., D. Veneziano, C. Lepore and P. Furcolo (2007) Simple IDF Estimation under Multifractality, *Geophysical Research Abstracts*, Vol. 9, European Geosciences Union General Assembly, Vienna, Austria, April 2007.
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- Veneziano, D. and A. Langousis (2005) The Maximum of Multifractal Cascades: Exact Distribution and Approximations, *Geophysical Research Abstracts*, Vol. 7, European Geosciences Union General Assembly, Vienna, Austria, April 2005
- Veneziano, D. and A. Langousis (2004) The Rainfall Areal Reduction Factor: A Multifractal Analysis, *Geophysical Research Abstracts*, Vol. 6, European Geosciences Union General Assembly, Nice, France, April 2004.
- Langousis, A. and D. Koutsoyiannis (2003) A Stochastic Methodology for Generation of Seasonal Time-series Reproducing Over-year Scaling Behavior, Hydrofractals '03, An international conference on fractals in hydrosociences, Monte Verita, Ascona, Switzerland, August 2003, ETH Zurich, MIT, Universite Pierre et Marie.

Educational Material / Lecture Notes:

- Langousis, A. (2018) *Risk and Reliability Analysis for Infrastructures*, Department of Civil Engineering, University of Patras, Greece, 146 pages (in Greek).
- Langousis, A. (2017) *Water Distribution, Sewage and Rainwater Drainage Networks*, Department of Civil Engineering, University of Patras, Greece, 144 pages (in Greek).

Newspaper Articles (popular science):

- Langousis, A. (2012) Letter to G. Asmussen, *in.gr*, August 08, 2012 (in Greek). ([active link](#))
- Langousis, A. (2009) Hazards from the Last Economic Crisis, *AXIA*, May 09, 2009 (in Greek). ([active link](#))
- Langousis, A. (2008) Development and our Faulty Choices, *TA NEA*, July 15, 2008 (in Greek). ([active link](#))
- Langousis, A. (2007) Society and Environment under Development, *TA NEA*, July 31, 2007 (in Greek). ([active link](#))

Technical Reports:

- Kaleris, V., A. Langousis and A. Ziogas (2013) Investigation of the Surface and Sub-surface Hydrology of Glafkos Catchment in Greece, Final report of the project UFZ-02/2009, RA-3205/09.
- Kaleris, V. and A. Langousis (2012) Comparison of the rainfall-runoff models ENNS and MIKE SHE in simulating runoff in Galfkos Catchment, 2nd annual report of the project UFZ-02/2009, RA-3205/09.
- Langousis, A. (2006) *Cloud Microphysical Processes: Theory and Bulk Parameterizations in Numerical Weather Prediction (NWP) Models*, Internal report, Department of Civil and Environmental Engineering, MIT.
- Langousis, A. and D. Koutsoyiannis (2003) *Mathematical Derivations for Seasonal Models Reproducing Over-year Scaling Behavior*, Internal report, Department of Water Resources, Hydraulic and Maritime Engineering - National Technical University of Athens, Greece (<http://www.itia.ntua.gr/getfile/599/2/2003StochMethodsSeasonalScaleApp.pdf>).

Research and Community Outreach:

- Brehm, D. (2009) Assessing Rainfall Risk from Tropical Cyclones, *On Balance*, Dep. of Civil and Env. Eng., MIT, ([active link](#))
- Chrisostomidou, V. (2017) Scholarships as a Foundation for Life, *KATHIMERINI*, March 04, 2017 (in Greek) ([active link](#)).

Invited Talks and Lectures:

- Langousis, A. (2019) Hydroclimatic variability and extreme hydrometeorological events: Prevention, Adaptation, Mitigation, *Invited Talk*, 18th Scientific Symposium, Crisis, Hazards, Disasters in the era of climate change, Foundation of Cephalonia & Ithaka (IKI), Argostoli, Cephalonia, Greece, 31 Aug.- 01 Sep. 2019.
- Langousis, A. (2019) Using approximations from multifractal theory to estimate IDF curves at ungauged locations, *Invited Talk*, Department of Civil and Environmental Engineering, University of California Irvine (UCI), Irvine, CA, USA, 23- 30 Jun. 2019.
- Langousis, A. (2019) Probabilistic Modeling of Natural and Engineered Systems, *Invited Talk*, 3rd Hellenic National Conference of Civil Engineering Students, University of Patras, 16 March 2019, Patras, Greece.
- Langousis, A. (2018) Modeling Hydroclimatic Risk, *Invited Lecture*, Department of Civil and Environmental Engineering, University of Connecticut, Storrs, CT, USA, 7- 14 Jul. 2018.
- Langousis, A. (2017) Uncertainty in Civil Engineering, *Invited Talk*, 1st Hellenic National Conference of Civil Engineering Students, Athens Chamber of Commerce and Industry (ACCI), March 11, 2017, Athens, Greece.
- Langousis, A. (2015) Modeling Daily Rainfall Conditional on Large-scale Atmospheric Forcing: Assessing Rainfall Statistics Based on Climate Model Results, *Invited Talk*, 10th International Workshop on Precipitation in Urban Areas (UrbanRain15), Pontresina, Switzerland, 1- 5 Dec. 2015, DOI: 10.3929/ethz-a-010549004 (ETH E-collection).
- Langousis, A. (2015) Modeling Daily Rainfall Occurrence and Amount Conditional on Atmospheric Predictors, *Invited Lecture*, École Polytechnique Fédérale de Lausanne (EPFL), Switzerland, 28 Sep. - 02 Oct. 2015.
- Langousis, A. (2015) Modeling Daily Rainfall Occurrence and Amount Conditional on Atmospheric Predictors, *Invited Lecture*, Dipartimento di Ingegneria Civile, Ambientale e Architettura, University of Cagliari, Cagliari, Italy, 04-08 May 2015.
- Langousis, A. and V. Kaleris (2013) Data Analysis in Glafkos Catchment, Helmholtz Centre for Environmental Research (UFZ), Leipzig, Germany, 11-14 February 2013.

- Langousis, A. (2010) Stochastic Modeling and Estimation of Extreme Rainfalls, Department of Civil Engineering, University of Patras, Patras, Greece, June 2010.
- Langousis, A. (2010) Simple Methods for Extreme Rainfall Estimation, Workshop on: "Integrated Design for Flood Protection: A Challenge for the Future", Association of Civil Engineers of Greece, Athens, Greece, April 2010.
- Langousis, A. (2010) Assessing Rainfall Risk from Tropical Cyclones, Department of Environmental Engineering, Technical University of Crete, Chania, Greece, January 2010.
- Langousis, A. (2009) Extreme Rainfall Intensities and Long-term Rainfall Risk from Tropical Cyclones, Department of Civil and Environmental Engineering, University of Cyprus, Nicosia, Cyprus, November 2009.
- Langousis, A. (2009) Extreme Rainfall Intensities and Long-term Rainfall Risk from Tropical Cyclones, Risk Management Solutions, London, U.K., June 2009.
- Langousis, A. (2009) Assessing Rainfall Risk from Tropical Cyclones, Department of Civil Engineering, University of Patras, Patras, Greece, June 2009.
- Langousis, A. (2009) Assessing Rainfall Risk from Tropical Cyclones, AIR Worldwide, Boston, MA, U.S.A., May 2009.
- Langousis, A. (2009) Assessing Rainfall Risk from Tropical Cyclones, Travelers Insurance, Connecticut, U.S.A., April 2009.

Courses Taught:

- *Risk and Reliability Analysis for Infrastructures*: Compulsory course in the postgraduate program "*Hydraulic & Environmental Engineering for Sustainable Infrastructures*" of the Department of Civil Engineering at the University of Patras, Greece (2018-present).
- *Water Resources Management*: Elective course in the postgraduate program "*Hydraulic & Environmental Engineering for Sustainable Infrastructures*" of the Department of Civil Engineering at the University of Patras, Greece (2018-present).
- *Hydraulic Structures*: Elective undergraduate course (5th and final year of undergraduate studies) in the Department of Civil Engineering at the University of Patras, Greece (2014-present)
- *Water Distribution, Sewage and Rainwater Drainage Networks*: Compulsory undergraduate course (4th year of undergraduate studies) in the Department of Civil Engineering at the University of Patras, Greece (2013-present)
- *Design of Civil Infrastructure and Environmental Protection*: Graduate course in the program "Design of Civil Infrastructure" of the School of Science and Technology at the Hellenic Open University, Greece (Sep. 2017- Sep. 2018)
- *Stochastic Methods for Hydrologic Simulations*: Graduate course in the program "Water Resources and Environment" of the Department of Civil Engineering at the University of Patras, Greece (2014-2018)
- *Environmental Data Analysis*: Graduate course in the program "Water Resources and Environment" of the Department of Civil Engineering at the University of Patras, Greece (2014-2018)
- *Numerical Methods in Environmental Engineering*: Undergraduate course in the Department of Environmental Engineering at the Technical University of Crete, Chania, Greece (2009 - 2010).
- *Probability and Statistics in Engineering*: Graduate course in the Department of Civil and Environmental Engineering at the Massachusetts Institute of Technology, MIT, USA (2006-2008).
- *Uncertainty in Engineering*: Undergraduate course in the Department of Civil and Environmental Engineering at the Massachusetts Institute of Technology, MIT, USA (2005-2007).

Personal Skills and Competences:

Languages: Greek (Native), English (Proficient), French (Advanced)

Distance Learning: Certified in distance learning methods, tools and platforms.

Computer skills:

- Proficient in Languages of Technical Programming: Fortran, VBA
- Proficient in Languages of Technical Computing: MatLab, Mathematica
- Proficient in Microsoft Office tools: Word, Excel, PowerPoint, Visio
- Expert in Hydraulic Simulation Models: EPANet, HEC-RAS
- Expert in Computer Aided Design: Autocad
- Expert in Graphic Design Applications: Photoshop, CorelDRAW