

CURRICULUM VITAE

MARCOS VINICIUS BUENO DE MORAIS

B.Sc. in Physics from the State University of Maringá (2007), B.Ed. in Mathematics from the Faculdade Ibra de Brasília (2021), M.Sc. in Meteorology from the University of São Paulo (2010) and Ph.D. in Meteorology from the University of São Paulo (2014). During 2019 and 2021 was Adjunct Professor at the Facultad de Ciencias de la Ingeniería at the Universidad Católica del Maule. Director of the Master's Program in Sustainable Construcción (2019-2020). He is a researcher at the Extreme Atmospheric Events Laboratory (EAELab) and Air Pollution Analysis Laboratory (LAPAr), both at UTFPR, and at the Meteorological Center of Bauru (IPMet) in the Universidade Estadual Paulista (UNESP). My research interests are mesoscale atmospheric modelling, statistical hydrology, urban climate, developments of low-cost meteorological instrumentation, and atmospheric extreme events.

📍 Current Professional Address

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👤 Personal Information

Gender: Male
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🎓 Formal Education/Degree

2010–2014	Ph.D. in Science (Meteorology) Universidade de São Paulo Thesis Title: Effects of vegetation on the terms of energy budget in urban areas.
2008–2010	M.Sc. in Science (Meteorology) Universidade de São Paulo Dissertation Title: Investigation of the urban boundary layer over São Paulo using mesoscale model with urban scheme.

2021–currently	Specialization in Applied Behavior Analysis (ABA) Faculdade Ibra de Tecnologia.
2021–2021	Specialization in Big Data UC San Diego (Coursera).
2020–2021	B.Ed. in Mathematics Faculdade Ibra de Brasília Title: Text Mining application for autism spectrum disorder studies for psychology and education area.
2004–2007	B.Sc. in Physics State University of Maringá Title: Numerical Modeling application for analysis of local circulation over a region occupied by a lake.

Postdoctorate

2021-currently	Universidade de São Paulo - São Paulo, USP, Brazil. Grantee of: São Paulo Research Foundation (#2020/14556-4), FAPESP, Brazil
2019–2020	Bauru Meteorological Center - São Paulo, IPMet, Brazil. No Grantee.
2017–2018	Federal Technological University - Paraná, UTFPR, Brazil Grantee of: Coordination of Superior Level Staff Improvement (#88887.115875/2015-01), CAPES, Brazil.
2015–2017	Federal Technological University - Paraná, UTFPR, Brazil Grantee of: Coordination of Superior Level Staff Improvement (#88881.030423/2013-01), CAPES, Brazil.

Languages

English	Comprehends Well, Speaks Well, Reads Well, Writes Well.
Spanish	Comprehends Well, Speaks Well, Reads Well, Writes Well.
Portuguese	Native speaker.

Academic/Teaching Experience

2019 - 2021	Universidad Católica del Maule (UCM) Talca, Chile Activity: Assistant Professor and researcher at Departamento de Obras Civiles, Director of Sustainable Construction Master Program (2019-2020). Teaching: Hydrology / Advanced Hydrology / Environmental Modeling / Data Mining (Master Program) / Research Methods.
2015-currently	Federal Technological University - Paraná (UTFPR) Londrina, Brazil Activity: Working on researching and development with numerical modeling of several atmospheric events, air pollution and hydrological processes. Teaching: Atmospheric Modeling (Post-Graduation) / Seminars (Post-Graduation) / Statistics for environmental datasets (Post-Graduation).

2016 - 2018	Faculdade de Tecnologia (FATEC) Garça, Brazil Activity: Professor and Research Director. Teaching: Eletromagnetism / Classical Mechanics.
2005 - 2006	State University of Maringá (UEM) Maringá, Brazil Teaching: Class assistant of Theoretical and Experimental Physics I (undergraduate) Class assistant of Theoretical and Experimental Physics II (undergraduate).

Research Projects

2022 – currently	Green infrastructure modelling as a mitigation strategy for local climate change and air pollution in Latin American Cities Director (ANID Grant #11220138) ★
2021 – currently	Sampling and modeling Primary Biological Aerosol Particles (PBAPS) at South-Southern Brazil: associated to improvements of climate models <i>Researcher Associate (FAPESP Grant #2016/06160-8)</i>
2021 – currently	Development of environmental quality monitoring network in smart cities - EnvCity <i>Researcher Associate (FAPESP Grant #2020/05135-5)</i>
2019 – currently	Spatial and temporal characterization of hail storms using electronic sensors Director (CNPq Grant #423316/2018-4) ★
2019 – currently	Air quality, climate and urbanization in South-Southeastern Region of Brazil <i>Researcher Associate (CNPq Grant #436466/2018-0)</i>
2018 – 2020	Development of a UAV mobile charging platform coupled with agrometeorological sensors for hailstorm analysis Director (FAPESP Grant #19136-0/2017) ★
2016 – 2021	Detection of the role of climatic changes and the conditions of use and occupation of the soil on the hydrology of the Paraná River Basin <i>Researcher Associate (CAPES Grant #5-19/2015)</i>
2013 – 2016	Definition of the characteristics of the São Paulo Metropolitan Region to improve the urban parameterization in the BRAMS model <i>Researcher Associate (CNPq Grant #483354/2013-9)</i>

Articles in Scientific Journals

- Vera-Puerto, I.; Valdés, H.; **Morais, M.V.B.**; Correa, C.; Olave, J.; Carrasco-Benavides, M.; Schiapacasse, F.; Arias, C.A. (2022) Reclamation of Treated Wastewater for Irrigation in Chile: Perspectives of the Current State and Challenges. *Water*, **14**(4), 627. [doi:10.3390/w14040627](https://doi.org/10.3390/w14040627)
- Fujita, T.; **Morais, M.V.B.**; Santos, V.C.; Rudke, A.P.; Eiras, M.M.; Xavier, A.C.F.; Rafee, S.A.A.; Santos, E.B.; Martins, L.D.; Uvo, C.; Souza, R.A.F.; Freitas, E.D.; Martins, J.A. (2022) Simulating discharge in a non-dammed river of Southeastern South America using SWAT model. *Water*, **14**(3), 488. [doi:10.3390/w14030488](https://doi.org/10.3390/w14030488)
- **Morais, M.V.B.** (2022) Bibliographic comparison on mathematics teaching for people with Autistic Spectrum Disorder using Text Mining Technique. *REMAT: Eletronic Journal of Mathematics*. **8**, e2002. [doi:10.35819/remat2022v8i1id5288](https://doi.org/10.35819/remat2022v8i1id5288)
- Marciotto, E.R.; **Morais, M.V.B.** (2021) Energetics of Urban Canopies: A Meteorological Perspective. *J.* **21**, 110-118. [doi:10.3390/j4040047](https://doi.org/10.3390/j4040047)

- Xavier, A.C.F.; Martins, L.; Rudke, A.P.; **Morais, M.V.B.**; Martins, J.A.; Blain, G.C. (2021) Evaluation of Quantile Delta Mapping as a bias-correction method in maximum rainfall dataset from downscaled models in São Paulo state (Brazil). *International Journal of Climatology*. doi:10.1002/joc.7238
- Urbina Guerrero, V.V.; **Morais, M.V.B.**; Freitas, E.D.; Martins, L.D. (2021) Numerical Study of Meteorological Factors for Tropospheric Nocturnal Ozone Increase in the Metropolitan Area of São Paulo. *Atmosphere*. doi:10.3390/atmos12020287
- Rudke, A.P.; Xavier, A.C.; Fujita, T.; Rafee, S.A.A.; Martins, L.D.; **Morais, M.V.B.**; Albuquerque, T.T.A.; Freitas, E.D.; Martins, J.A. (2021) Mapping past landscapes using landsat data: Upper Paraná River Basin in 1985. *Remote Sensing Applications: Society and Environment*. doi:10.1016/j.rsase.2020.100436
- Kawashima, A.B.; Martins, L.D.; Rafee, S.A.A.; **Morais, M.V.B.**; Rudke, A.P.; Martins, J.A. (2020) Development of spatialized atmospheric emission inventory for the main industrial sources in Brazil. *Environmental Science and Pollution Research*. doi:10.1007/s11356-020-08281-7
- **Morais, M.V.B.**; Urbina Guerrero, V.V.; Rudke, A.P.; Fujita, T.; Martins, L.D.; Martins J.A. (2020) Evaluation of future climate change scenarios in Urban Heat Island and its neighborhood using dynamical downscaling. *Journal of Urban and Environmental Engineering*, **14**, 110-118. doi:10.4090/juee.2020.v14n1.101118
- ★ **Morais, M.V.B.**; Urbina Guerrero, V.V.; Freitas, E.D.; Marciotto, E.R.; Valdes, H.; Correa-Becerra, C.; Agredano, R.; Vera-Puerto, I. (2019) Sensitivity of radiative and thermal properties of building material in the urban atmosphere. *Sustainability*, **11**, 6865. doi:10.3390/su11236865
- Xavier, A.C.F.; Blain, G.C.; **Morais, M.V.B.** (2019) Selecting the best nonstationary Generalized Extreme Value distribution: On the influence of different numbers of GEV-models. *Bragantia*, **78**, 606-621. doi: 10.1590/1678-4499.20180408
- Manfio, E.R.; **Morais, M.V.B.**; Guimarães M.P.; Moreno, F.C.(2019) Processamento de Linguagem Natural aplicado a Veículo Terrestre Não-Tripulado para monitoramento remoto e gestão de energia. *REGRAD*, **12**, 1-16.
- Xavier, A.C.F.; Rudke, A.P.; Fujita, T.; Blain, G.C.; **Morais, M.V.B.** et al. (2019). Stationary and non stationary detection of extreme precipitation events and trends of average precipitation from 1980 to 2010 in the Paraná River Basin Brazil. *International Journal of Climatology*, 1-16. doi: 10.1002/joc.6265
- Rudke, A.P.; Xavier, A.C.F.; Uvo, C.; Almeida, D.S.; Freitas, E.D.; Santos, E.B.; Martins, J.A.; Martins, L.D. ; **Morais, M.V.B.**; et al. (2019). Land cover data of Upper Parana River Basin, South America, at high spatial resolution. *International Journal of Applied Earth Observation and Geoinformation*, **83**, 101926. doi:10.1016/j.jag.2019.101926
- ★ **Morais, M.V.B.**, Freitas, E.D.; Marciotto, E.R. et al. (2018) Implementation of Observed Sky-View Factor in a Mesoscale Model for Sensitivity Studies of the Urban Meteorology. *Sustainability*, **10**, 2183. doi:10.3390/su10072183
- **Morais, M.V.B.**; Urbina Guerrero, V.V. (2018) Analysis of computational performance and adaptive time step for numerical weather prediction models. *International Journal of Engineering and Mathematical Modelling*, **2018**, 1-8.
- Medeiros, A.S.S.; Ribeiro, I.O.; **Morais, M.V.B.** et al. (2018) River Breezes for Pollutant Dispersion in GoAmazon2014/5. *Atmospheric Chemistry and Physics Discussion*. doi:10.5194/acp-2018-347
- Manfio, E.R.; **Morais, M.V.B.**; Moreno, F.C. et al. (2018) Monitoring System for Agrometeorological Application with Voice-Controlled Interface. *International Journal of Advanced Engineering Research and Science*, **5**, 12-17. doi:10.22161/ijaers.5.12.3
- Silva, V.A.D.; **Morais, M.V.B.**; Manfio, E.R. (2018) Development of a low cost anemometer using magnetic induction. *e-F@tec*, **8**, 9.

- Alves, C.A.; **Morais, M.V.B.** (2018) Sensitivity of the sound intensity sensor for hail detection. *REGRAD - Revista Eletrônica de Graduação do UNIVEM*, **11**(1), 16-27.
- ★ **Morais, M.V.B.**; Marciotto, E.R. ; Urbina Guerrero, V.V.; FREITAS, E.D. (2017) Effective albedo estimates for the Metropolitan Area of São Paulo using empirical sky-view factors. *Urban Climate*, **21**, 183-194. [doi:10.1016/j.uclim.2017.06.007](https://doi.org/10.1016/j.uclim.2017.06.007)
- Abou Rafee, S.A.; Martins, L.D. ; Kawashima, A.B.; Almeida, D.S. ; **Morais, M.V.B. et al.** (2017) Contributions of mobile, stationary and biogenic sources to air pollution in the Amazon rainforest: a numerical study with the WRF-Chem model. *Atmospheric Chemistry and Physics*, **17**, 7977-7995. [doi:10.5194/acp-17-7977-2017](https://doi.org/10.5194/acp-17-7977-2017)
- Medeiros, A.S.S.; Calderaro, G.; Guimarães, P.C.; Magalhães, M.R.; **Morais, M.V.B. et al.** (2017) Power plant fuel switching and air quality in a tropical, forested environment. *Atmospheric Chemistry and Physics*, **17**, 8987-8998. [doi:10.5194/acp-17-8987-2017](https://doi.org/10.5194/acp-17-8987-2017)
- **Morais, M.V.B.**; Urbina Guerrero, V.V.; Manfio, E.R. (2017) Analysis of the performance of numerical weather prediction in ARM architecture for nowcasting. *e-f@tec*, **7**, 4.
- Guimarães, M.P.; Moreno, F.C.; Manfio, E.R.; **Morais, M.V.B.** (2017) HCIs for sustainable energies. *e-f@tec*, **7**, 12.
- ★ **Morais, M.V.B.**; Urbina Guerrero, V.V. *et al.* (2017) Dynamical Downscaling of Future Climate Change Scenarios in Urban Heat Island and Its Neighborhood in a Brazilian Subtropical Area. *Proceedings*, **1**, 106. [doi:10.3390/ecas2017-04130](https://doi.org/10.3390/ecas2017-04130)
- Padilla, L.G.M.; Duran, E.Y.O.; Martins, J.A.; **Morais, M.V.B. et al.** (2016) Current situation of air quality in the main cities of Latin America. *Ciência e Natura*, **38**, 523. [doi:10.5902/2179460X20290](https://doi.org/10.5902/2179460X20290)
- ★ **Morais, M.V.B.**; Freitas E.D. *et al.* (2016) A modeling analysis of urban canopy parameterization representing the vegetation effects in the megacity of São Paulo. *Urban Climate*, **17**, 102-115. [doi:10.1016/j.uclim.2016.04.004](https://doi.org/10.1016/j.uclim.2016.04.004)
- Rafee, S.A.A.; Kawashima, A.B.; **Morais, M.V.B. et al.** (2015) Assessing the Impact of Using Different Land Cover Classification in Regional Modeling Studies for the Manaus Area, Brazil. *Journal of Geoscience and Environment Protection*, **3**, 77-82. [doi:10.4236/gep.2015.36013](https://doi.org/10.4236/gep.2015.36013)
- Kawashima, A.B.; Urbina Guerrero, V.V.; Martins, L.D.; **Morais, M.V.B. et al.** (2015) Estimates and Spatial Distribution of Emissions from Sugar Cane Bagasse Fired Thermal Power Plants in Brazil. *Journal of Geoscience and Environment Protection*, **3**, 72-76. [doi:10.4236/gep.2015.36012](https://doi.org/10.4236/gep.2015.36012)
- **Morais, M.V.B.**; Oliveira, A.P.; Ferreira, M.J. (2009) Numerical study of the radiation budget in the surface: diurnal and annual variation of the albedo in the city of São Paulo. *Ciência e Natura, Special Number*, 297-300. [doi:10.5902/2179460X9576](https://doi.org/10.5902/2179460X9576)

Book Chapters

- **Morais, M.V.B.**; Urbina-Guerrero, V.V. Urban canopy-atmosphere interaction parameterization applied to Regional Atmospheric Models. In: Justin A. Daniels. (Org.). *Advances in Environmental Research*. 1ed.New York: Nova Science Publishers, 2021, **86**, 169-194.
- **Morais, M.V.B.** Modeling Effective Albedo in Urban Areas: Applications for Micro and Mesoscale Modeling. In: Justin A. Daniels. (Org.). *Advances in Environmental Research*. 1ed.New York: Nova Science Publishers, 2018, **64**, 229-250.

- Sobrinho, O.M.; **Morais, M.V.B.**; Martins, L.D. (2021) Atmospheric effects of urban representation improvements in weather model. In: 2021 Congreso Colombiano y Conferencia Internacional de Calidad del Aire y Salud Publica (CASAP), Bogotá, Colombia.
- **Morais, M.V.B.**; Urbina-Guerrero, V.V.; Martins, J.A. (2020) Spatial analysis of hail formation in a tornado event by numerical modeling. In: XXII Chilean Physics Symposium, Santiago, Chile.
- Urbina Guerrero, V.V.; **Morais, M.V.B.**; Freitas, E.D.; Martins, L.D. (2020) Numerical simulation of nocturnal ozone increase in Metropolitan Area of São Paulo. In: The 3rd International Electronic Conference on Atmospheric Sciences **ECAS**, 2020. Sciforum Electronic Conference Series, 2020. v. 3.
- Tapia, M.N.; **Morais, M.V.B.**(2020) Land use data in the Middle Maule River Sub-basin: Classification and comparison between 1999 and 2019. In: 2020 IEEE Latin American GRSS & ISPRS Remote Sensing Conference. **LAGIRS**, 2020, p. 201.
- Marciotto, E.R.; **Morais, M.V.B.**(2019) Force-restore modeling of observed hystereis patterns from micrometeorological databases. In: XI Brazilian Micrometeorology Workshop, São José dos Campos. **XI WBMicro**, 2019, 11.
- Medeiros Sobrinho, O.; **Morais, M.V.B.**; Martins, L.D.(2019) Local Climate Zones classification for Londrina and Curitiba. In: XI Brazilian Micrometeorology Workshop, São José dos Campos. **XI WBMicro**, 2019, 11.
- Xavier, A.C.F.; **Morais, M.V.B.**; Blain, G.C.(2019) Previously bias correction of high-resolution models to extreme rainfall values (1950-2005) in Sao Paulo State. In: V Post-Graduation Congress of Campinas Agronomical Institute, Campinas. **V IAC Post-Graduation Congress**, 2019, 5.
- Paula, R.C.A.; Manfio, E.R.; **Morais, M.V.B.**.(2019) Unmanned Ground Vehicle controlled by HMI. In: 9th Congress of Scientific Research, Garça - SP. **9th Congress of Scientific Research: Humanism, Entrepreneurship, Technology, Innovation and Ethics.**, 2019, 9.
- Manfio, E.; **Morais, M.V.B.**; Manfio, E.R.(2019) HCI Web for prototypes monitoring of Solar-Sima project. In: 9th Congress of Scientific Research, Garça - SP. **9th Congress of Scientific Research: Humanism, Entrepreneurship, Technology, Innovation and Ethics.**, 2019, 9.
- Silva, G.S.; **Morais, M.V.B.**; Manfio, E.R.(2019) Configuration and Implementation of a communication server for Solar-Sima project. In: III Entrepreneurship Workshop, Garça. **III Entrepreneurship Workshop**, 2019, 3.
- Paulino, M.A.; **Morais, M.V.B.**; Manfio, E.R.(2019) Movement control software for unmanned ground vehicle. In: III Entrepreneurship Workshop, Garça. **III Entrepreneurship Workshop**, 2019, 3.
- Paula, R.C.A; Manfio, E.R.; **Morais, M.V.B.**. (2019) Unmanned Ground Vehicle with fixe obstacle identification resources. In: III Entrepreneurship Workshop, Garça. **III Entrepreneurship Workshop**, 2019, 3.
- Borghi, P.B.; Manfio, E.R.; **Morais, M.V.B.**. (2019). Automotive painting and maintenance technique for mechatronics prototypes of FAPESP project of Fatec Garça. In: III Entrepreneurship Workshop, Garça. **III Entrepreneurship Workshop**, 2019, 3.
- Ranci, G.H.C.; Barreto, A.P.Z.; **Morais, M.V.B.**; Manfio, E.R.(2019) Meteorological sensor launcher voice-controlled for UAVs. In: III Entrepreneurship Workshop, Garça. **III Entrepreneurship Workshop**, 2019, 3.
- Mariucio, J.V.D.; **Morais, M.V.B.**; Manfio, E.R.(2019) Solar-Sima Mobile: Photovoltaic system monitoring application with meteorological sensors. In: III Entrepreneurship Workshop, Garça. **III Entrepreneurship Workshop**, 2019, 3.

- Souza, Y.H.M.; Lira, G.C.; Barreto, A.P.Z; **Morais, M.V.B.**; Manfio, E.R.(2019) Hailstone collection and storage system. In: III Entrepreneurship Workshop, Garça. **III Entrepreneurship Workshop**, 2019, 3.
- **Morais, M.V.B.**; Manfio, E.R.; Paulino, M.A. *et al.* (2018) Agrometeorological sensors coupled to a Unmanned Ground Vehicle with visualization software for mobile devices. In: National Symposium of Technology in the Agrobusiness, Presidente Prudente. **X Sintagro**, 2018, 10.
- **Morais, M.V.B.**; Fujita, T. *et al.* (2018) Assessment of the SWAT model for downscaled future climate scenarios for the Ivaí River Basin. In: International Soil and Water Assessment Tool Conference, 2018, Brussels. **Book of Abstracts**, 2018, 85.
- Fujita, T.; **Morais, M.V.B.**; Monteiro, J.A.F. *et al.* (2018) Nearest Neighbor and Inverse Distance Weighting for rainfall estimation in SWAT application. In: International Soil and Water Assessment Tool Conference, 2018, Brussels. **Book of Abstracts.**, 2018, 8.
- Borghi, P.B.; Manfio, E.R.; **Morais, M.V.B.** (2018) Techniques of painting and automotive maintenance for mechatronic prototypes of the FAPESP project of FATEC Garça. In: 8th Congress of Scientific Research, Garça - SP. **8th Congress of Scientific Research: Entrepreneurship, Technology, Innovation and Ethics**, 2018. 8. 431.
- Bragatto Neto, P.; **Morais, M.V.B.**; Manfio, E.R. (2018) Programming, application and study of auxiliary sensors in UGT of the SOLAR-SIMA project. In: 8th Congress of Scientific Research, Garça - SP. **8th Congress of Scientific Research: Entrepreneurship, Technology, Innovation and Ethics**, 2018. 8. 436.
- Grespi, J.P.; **Morais, M.V.B.**; Manfio, E.R. (2018) Implementation of WIFI system for SOLAR-SIMA prototype with the ESP12 shield for Arduino. In: 8th Congress of Scientific Research, Garça - SP. **8th Congress of Scientific Research: Entrepreneurship, Technology, Innovation and Ethics**, 2018. 8. 434.
- Paula, R.C.A.; Manfio, E.R.; **Morais, M.V.B.**. (2018) Unmanned Ground Vehicle with identification feature for fixed obstacles. In: 8th Congress of Scientific Research, Garça - SP. **8th Congress of Scientific Research: Entrepreneurship, Technology, Innovation and Ethics**, 2018. 8. 435.
- Mancuzo, E.; Manfio, E.R.; **Morais, M.V.B.**; Dolci, D. (2018) Web application for Solar-Sima project supervision. In: 8th Congress of Scientific Research, Garça - SP. **8th Congress of Scientific Research: Entrepreneurship, Technology, Innovation and Ethics**, 2018. 8. 353.
- Mariucio, J.V.D.; **Morais, M.V.B.**; Manfio, E.R. (2018) Solar-Sima Mobile: Application for monitoring of photovoltaic system equipped with meteorological sensors. In: 8th Congress of Scientific Research, Garça - SP. **8th Congress of Scientific Research: Entrepreneurship, Technology, Innovation and Ethics**, 2018. 8. 162.
- Paulino, M.A.; **Morais, M.V.B.**; Manfio, E.R. (2018) Unmanned Ground Vehicle Motion Control Software. In: 8th Congress of Scientific Research, Garça - SP. **8th Congress of Scientific Research: Entrepreneurship, Technology, Innovation and Ethics**, 2018. 8. 442.
- Ferreira, B.A.; **Morais, M.V.B.**; Manfio, E.R. (2018) Wind generator for microprocessors. In: 8th Congress of Scientific Research, Garça - SP. **8th Congress of Scientific Research: Entrepreneurship, Technology, Innovation and Ethics**, 2018. 8. 442.
- Lira, G.C.; **Morais, M.V.B.**; Manfio, E.R. (2018) Hailstone collection and storage system. In: 8th Congress of Scientific Research, Garça - SP. **8th Congress of Scientific Research: Entrepreneurship, Technology, Innovation and Ethics**, 2018. 8. 443.
- Silva, G.S.; **Morais, M.V.B.**; Manfio, E.R. (2018) Server configuration and implementation for Solar-Sima project communication. In: 8th Congress of Scientific Research, Garça - SP. **8th Congress of Scientific Research: Entrepreneurship, Technology, Innovation and Ethics**, 2018. 8. 161.

- Hopka, W.; **Morais, M.V.B.**; Manfio, E.R. (2018) Use of linguistic search mining for atmospheric phenomena integrated to Solar-Sima project. In: 8th Congress of Scientific Research, Garça - SP. **8th Congress of Scientific Research: Entrepreneurship, Technology, Innovation and Ethics**, 2018. 8. 161.
- Santos, R.S.; **Morais, M.V.B.**; Manfio, E.R. (2018) Automatic Stationary Battery Manager for Solar-Sima Prototype. In: 8th Congress of Scientific Research, Garça - SP. **8th Congress of Scientific Research: Entrepreneurship, Technology, Innovation and Ethics**, 2018. 8. 441.
- Xavier, A.C.F.; Siqueira, K.N.; Santos, Y.L.A.; Venturoli, F.; **Morais, M.V.B.**; Blain, G.C. (2018) NEX-GDDP regionalized model performance for Metropolitan Region of Campinas. In: VII Latin American Forestry Congress, 2018, Vitória. **Annals of CONFLAT**, 2018. 7.
- Kushikawa, H.M.D.; Manfio, E.R.; **Morais, M.V.B.** (2018) Calibration of a light sensor for measuring solar radiation. In: V EMET - Meteorology Meeting, Bauru. **V EMET - Meteorology meeting**, 2018.
- Rudke, A.P.; Fujita, T.; **Morais, M.V.B.**; *et al.* (2017) Hydrological Response of a Brazilian Catchment to Different Land Use and Land Cover Products. In: INTERNATIONAL SOIL AND WATER ASSESSMENT TOOL CONFERENCE, Warsaw. **Book of Abstracts**, 2017.
- Rafee, S.A.A.; Rudke, A.P.; Fujita, T.; **Morais, M.V.B.**; *et al.* (2017) Analysis of spatial distribution of observed ground - based data and large scale modelling of the Para na River Basin. In: INTERNATIONAL SOIL AND WATER ASSESSMENT TOOL CONFERENCE, Warsaw. **Book of Abstracts**, 2017.
- Fujita, T.; Rudke, A.P.; **Morais, M.V.B.**; *et al.* (2017) Response of Randomized Subsets of Rainfall Gauges Over a Paraná River Sub - basin. In: INTERNATIONAL SOIL AND WATER ASSESSMENT TOOL CONFERENCE, Warsaw. **Book of Abstracts**, 2017.
- **Morais, M.V.B.**; Urbina Guerrero, V.V. *et al.* (2017) Dynamical downscaling of future climate change scenarios in urban heat island and its neighborhood in a Brazilian subtropical area In Sciforum Electronic Conference Series **Proceedings of the 2nd Int. Electron. Conf. Atmos. Sci.** 2017, 2
- Silva, V.A.D.; **Morais, M.V.B.**; Manfio, E.R. (2017) Application of the concept of electromagnetic induction for wind speed. In: 7th Congress of Scientific Research, Garça - SP. **7th Congress of Scientific Research: Innovation, Sustainability, Ethics and Citizenship**, 2017. 7.
- Kushikawa, H.M.D.; **Morais, M.V.B.**; Manfio, E.R. (2017) Use of solar energy in division wake drones. In: 7th Congress of Scientific Research, Garça - SP. **7th Congress of Scientific Research: Innovation, Sustainability, Ethics and Citizenship**, 2017. 7.
- Alves, C.A.; **Morais, M.V.B.** (2017) Sensitivity of sound intensity sensor for hail detection. In: 7th Congress of Scientific Research, Garça - SP. **7th Congress of Scientific Research: Innovation, Sustainability, Ethics and Citizenship**, 2017. 7.
- Rosario, G.P.A.F.; **Morais, M.V.B.** (2017) Development of an API for monitoring meteorological variables. In: 7th Congress of Scientific Research, Garça - SP. **7th Congress of Scientific Research: Innovation, Sustainability, Ethics and Citizenship**, 2017. 7.
- Martins, J.A.; Conceição, A.F.G.; Martins, L.D.; **Morais, M.V.B.**; *et al.* (2017) The role of vertical grid spacing in the simulation of storms. In: ECSS2017 - 9th European Conference on Severe Storms, Pula. **ECSS2017 - 9th European Conference on Severe Storms**, 2017.
- Martins, L.D.; **Morais, M.V.B.**; *et al.* (2016) Study of the air quality in region impacted by emissions from thermoelectric power plants burning sugarcane bagasse in Brazil. In: IGAC Science Conference, Breckenridge. **IGAC Conference Abstracts**, 2016.
- Yamanaka, V.Y.; **Morais, M.V.B.**; *et al.* (2016) Analysis of hail storm occurrences in Paraná from the Integrated Disaster Information System - Civil Defense. In: XIX Brazilian Congress of Meteorology, João Pessoa. **Annals of XIX CBMET 2016**, 2016.

- **Morais, M.V.B.** (2016) Numerical sensitivity evaluation of the urban vegetation in the human thermal comfort for outdoor environment in the city of São Paulo. In: III National Symposium of Urban Studies. **III SNEU**, Campo Mourão, 2016, 410-422.
- Rafee, S.A.A.; Xavier, A.C.; Rudke, A.P.; Fujita, T.; Brand, V.S.; **Morais, M.V.B.**; *et al.* (2016). Analysis of flow trend and precipitation of the Tietê river basin. In: XIX Brazilian Congress of Meteorology, João Pessoa. **Annals of XIX CBMET 2016**, 2016.
- Freitas, E.D.; **Morais, M.V.B.**; *et al.* (2016) Aspects of urban occupation and its effects on atmospheric conditions in the Metropolitan Area of São Paulo. In: XIX Brazilian Congress of Meteorology, João Pessoa. **Annals of XIX CBMET 2016**, 2016.
- Martins, L.D.; Padilla, L.G.M.; **Morais, M.V.B.** *et al.* (2016) Land Use and Land cover evaluation in the air quality study in Metropolitan Region of Curitiba. In: XIX Brazilian Congress of Meteorology, João Pessoa. **Annals of XIX CBMET 2016**, 2016.
- Kawashima, A.B.; **Morais, M.V.B.**; *et al.* (2016) Regional Characterization of the Inventory of Atmospheric Emissions by Stationary Sources for Brazil. In: XIX Brazilian Congress of Meteorology, João Pessoa. **Annals of XIX CBMET 2016**, 2016.
- Fujita, T.; Rudke, A.P.; Xavier, A.C.; **Morais, M.V.B.**; *et al.* (2016) Application of Kriging and IDW techniques in the spatialization of precipitation data in the Paraná River Basin. In: XIX Brazilian Congress of Meteorology, João Pessoa. **Annals of XIX CBMET 2016**, 2016.
- Rudke, A.P.; Fujita, T.; Xavier, A.C.; **Morais, M.V.B.**; *et al.* (2016) Evaluation of global products of land use and cover for the Paraná River basin. In: XIX Brazilian Congress of Meteorology, João Pessoa. **Annals of XIX CBMET 2016**, 2016.
- Yamanaka, V.Y.; **Morais, M.V.B.**; *et al.* (2016) Detection, Monitoring and Analysis of Severe Storm Development associated with the occurrence of Hail in Southern Brazil. In: XXI UTFPR Seminar on Scientific and Technological Initiation, Francisco Beltrão. **XXI UTFPR Seminar on Scientific and Technological Initiation**, 2016. 21.
- Xavier, A.C.; Rudke, A.P.; **Morais, M.V.B.**; *et al.* (2016) Regionalized daily projection performance NASA NEX-GDDP: An assessment for precipitation at the Peixe Angical Hydroelectric Power Plant - Tocantins River. In: XIX Brazilian Congress of Meteorology, João Pessoa. **Annals of XIX CBMET 2016**, 2016.
- Martins, J.A.; Kawashima, A.B.; Rafee, S.A.A.; Capucim, M.N.; **Morais, M.V.B.**; *et al.* (2016) Emissions of NO_x, SO_x, and PM from stationary combustion sources in Brazil: Spatial distribution and population exposure assessment. In: IGAC Science Conference, Breckenridge. **IGAC Conference Abstracts**, 2016.
- Padilla, L.G.M.; Martins, L.D.; Martins, J.A.; Ardille, L.G.; Duran, E.Y.O.; **Morais, M.V.B.**; Urbina Guerrero, V.V. (2015) Current air quality situation of the main cities in Latin America. In: IX Brazilian Micrometeorology Workshop, Santa Maria. **Annals do IX Brazilian Micrometeorology Workshop**, 2015.
- **Morais, M.V.B.**; *et al.* (2014) Analysis of the Computational Performance of Numerical Models of Forecasting of Time and Waves in the EC2 Architecture Amazon Cloud. In: XXXV National Congress of Applied and Computational Mathematics, Natal. **Proceedings of the XXXV National Congress of Applied and Computational Mathematics**, 2014. 5.
- Urbina Guerrero, V.V.; **Morais, M.V.B.**; Freitas, E.D. (2014) Medium synoptic characteristics associated to the increase of nocturnal ozone in the metropolitan region of São Paulo. In: XVII Brazilian Congress of Meteorology, Recife. **Annals of XVIII CBMET 2014**, 2014.
- **Morais, M.V.B.**; Urbina Guerrero, V.V.; Freitas, E.D. (2014) Simplified model of effective albedo of the urban area from Sky-View Factor data. In: XVII Brazilian Congress of Meteorology, Recife. **Annals of XVIII CBMET 2014**, 2014.
- Matsuo, P.T.; Saad, S.; **Morais, M.V.B.**; Ramos, C.G.M. (2014) Predictability of extreme temperatures under adiabatic heating and heat wave alert criteria for health systems in Baixada Santista. In: XVII Brazilian Congress of Meteorology, Recife. **Annals of XVIII CBMET 2014**, 2014.

- **Morais, M.V.B.**; Urbina Guerrero, V.V.; Freitas, E.D. (2014) Effect of the type of urban vegetation in the human thermal confort for outdoor environments: a study caso for São Paulo. In: **Brazilian Symposium of Geographic Climatology** Curitiba. *Annals of SBCG*, 2014. 11. 220-231.
- Freitas, E.D.; Mazzoli, C.R.; Martins, J.A.; Martins, L.D.; Homann, C.T.; Bender, A.; Urbina Guerrero, V.V.; **Morais, M.V.B.**; *et al.* (2014) Air pollution dispersion by mesoscale circulations over the Metropolitan Area of São Paulo. In: 13th Quadrennial IGACGP Symposium - 13th IGAC Science Conference on Atmospheric Chemistry, Natal. **13th Quadrennial IGACGP Symposium - 13th IGAC Science Conference on Atmospheric Chemistry**, 2014. 117.
- **Morais, M.V.B.**; Freitas, E.D. *et al.* (2011) Impact of the verticalization of the "New Center" in Maringá in the surface energy budget In: VII Brazilian Micrometeorology Workshop, Santa Maria - RS. **Annals of VII Brazilian Micrometeorology Workshop**, 2011.
- **Morais, M.V.B.**; Oliveira, A.P.; Ferreira, M.J. (2009) Numerical study of the surface radiation budget: diurnal and annual variation of the albedo in the city of São Paulo. In: VI Brazilian Micrometeorology Workshop, Santa Maria - RS. **Annals of VI Brazilian Micrometeorology Workshop**, 2009.
- **Morais, M.V.B.**; Oliveira, A.P. (2009) Investigation of Planetary Boundary Layer over the Metropolitan Region of São Paulo using Mesoscale Model TVM - Urban Scheme of Martilli. In: Surface-Atmosphere Interactions in the Environmental Changes Context, Rio de Janeiro. **Surface-Atmosphere Interactions in the Environmental Changes Context**, 2009.
- **Morais, M.V.B.**; Stivari, S.M.S.; Martins, M.L.O.F. (2007) Analysis of the Local Circulation of the Reservoir Region of the Engenheiro Sérgio Motta Hydroelectric Power Plant (Porto Primavera). In: XVI Annual Meeting of Scientific Initiation, Maringá. **XVI Annual Meeting of Scientific Initiation**, 2007.
- **Morais, M.V.B.**; Martins, M.L.O.F.; Stivari, S.M.S. (2006) A Case Study of the Thermal Field of the City of Maringá. In: XV Annual Meeting of Scientific Initiation e VI Research Meeting of UEPG, Ponta Grossa. **XV Annual Meeting of Scientific Initiation e VI Research Meeting of UEPG**, 2006
- **Morais, M.V.B.**; Martins, M.L.O. *et al.* (2005) Thermal field analysis of the city of Maringá. In: IV Latin American Seminar of Physical Geography, Maringá - PR. **Annals of IV Latin American Seminar of Physical Geography**, 2005.
- Triaca, J.S.; Stivari, S.M.S.; **Morais, M.V.B.** *et al.* (2005). Analysis of the Thermal Confort in the city of Maringá. In: IV Latin American Seminar of Physical Geography, Maringá - PR. **Annals of IV Latin American Seminar of Physical Geography**, 2005.

Patent

- **Morais, M.V.B.**; Martins, L.D.; Martins, J.A. Automatic equipment to measure hail from sound sensor. 2019, Brazil. Number: BR1020190130660.

Events

- **Morais, M.V.B.** (2021) Water Resources for human use. Climathon Maule 2021 (Lecturer/Conference).
- **Morais, M.V.B.** (2020) Land Use changes contribution in the climate change in water resources: cases comparison in Brasil and Chile. Water Management: uncertainty factors Seminar (Lecturer/Conference).
- **Morais, M.V.B.** (2020) Impact of the Land Use changes in water resources based on the climate change scenarios. ANEIC Seminar (Lecturer/Conference).
- Reuse of wastewater in Chilean agriculture (Participation/Meeting).

- **Morais, M.V.B.** (2019) Availability of water resources in the climate change scenario. Final Project seminar: Determination of the impact of photoselective mesh covers on the ecophysiological variables incident in the production process and on the demand for water resources in the Limón de Pica crop, Pica commune, Tarapacá region. (Lecturer/Conference).
- **Morais, M.V.B.** (2019) Effect of climate change and land use in the Paraná River basin (Brazil). World Water Day: leaving no one behind - Universidad Católica del Maule (Lecturer/Conference).
- **Morais, M.V.B.** (2018) Application of meteorology from technological innovation. V EMET- Meteorological Meeting (Lecturer/Conference).
- Entrepreneurship Fair. 2018. (Participation/Meeting).
- Learning Assessment in Technology Teaching. 2018. (Meeting).
- Planning and pedagogical improvement week - SPAP. 2017. (Meeting).
- 7th Science Research Congress at FATEC (Coordinator)
- Pedagogical Meeting. 2016. (Meeting)
- **Morais, M.V.B.** (2014) History and Execution of the WW3 Ocean Model and Regional WRF Atmosphere Model and use of the Data Assimilation module in the WRF Atmospheric Model. I Meteo-oceanographic Modeling Workshop (Lecturer/Conference).
- **Morais, M.V.B.;** Stivari, S.M.S. (2006) A case study of the thermal field of the city of Maringá. XVI Physics Week (Lecturer/Conference).
- XVI Physics Week (#01911/2006).Um estudo de caso do campo térmico da cidade de Maringá. 2006. (Participation/Conference).
- XV Physics Week (#1770/2005). 2005. (Participation/Conference).
- XIV Physics Week (#02186/2004). 2004. (Participation/Conference).
- Brazilian Physics Olympiad Supervisors. 2004. (Other).

Honours and Awards

2022	Excellence in Reviewing Current Journal of Applied Science and Technology
2019	Excellence in Reviewing Asian Journal of Advanced Research and Reports.
2018	Excellence in Reviewing Journal of Geography, Environment and Earth Science International.
2017	Excellence in Reviewing Journal of Geography, Environment and Earth Science International.

Scientific Journal Reviewer

2022	Applied Sciences
2022	Current Journal of Applied Science and Technology
2022	Water Resources Management
2022	Forests

2022	American Journal of Climate Change
2021	Process Safety and Environmental Protection
2021	Energies
2021	Climate Research
2020	Remote Sensing Letters
2020	Brazilian Journal of Meteorology
2019	Natural Hazard
2019	Remote Sensing
2019	Climate
2019	Atmosphere
2019	Journal of the Air & Waste Management Association
2018	International Journal of Environmental Research and Public Health
2018	Hydrology
2018	Sustainability
2018	ISPRS International Journal of Geo-Information
2017	Journal of Geography, Environment and Earth Science International
2016	Building and Environment
2016	Energy and Buildings
2015	Urban Climate

Examination board member

- Freitas, E.D.; Hallak, R.; Duarte, D.H.S.; **Morais, M.V.B.**; Souza, D.O. Ph.D. Candidate thesis: Luana Ribeiro Macedo. Urbanization scenarios and its impacts in the atmospheric variables for urban heat island formation in the Metropolitan Area of Sao Paulo. 2021. Doctorate in Meteorology - Universidade de São Paulo.
- Martins, L.D.; Vara-Vela, A.L.; Freitas, E.D.; **Morais, M.V.B.** M.Sc. Candidate: Otavio Medeiros Sobrinho. Numerical study of the local climate zones and green infrastructure in the Londrina Metropolitan Area. 2021. Master in Environmental Engineering - Federal Technology University - Paraná.
- Medeiros, A.S.S.; Souza, R.A.F.; **Morais, M.V.B.** Candidate: José Alexandre Fernandes Mendes. Quantifying seasonal patterns of pollutants emissions and concentrations in the air quality of Manaus urban area. 2021. Qualifying Exam (Master in Climate and Environmental - INPA).
- Puerto, I.L.V.; Giovanetti, A.E.T.; **Morais, M.V.B.** Candidate: Pablo César Salgado Norambuena. Estimation of flooding area from breaking dams of loose material according to hydraulic and hydrological characteristics. 2021. Undergraduate Thesis (Civil Engineering) - Universidad Católica del Maule.
- Agredano, R.; Correa-Becerra, C.; **Morais, M.V.B.** Candidate: Eduardo Ignacio Sáez Castro. Study of the green infrastructure implementation to improve thermal sensation in the Plaza Cienfuegos, Talca, using numerical modelling. 2021. Undergraduate Thesis (Construction Engineering) - Universidad Católica del Maule.

- Puerto, I.L.V.; **Morais, M.V.B.**; Valdes, H. Candidates: Fernando Ignacio Vásquez González & Franco Nicolás Rojas Ruz. Technical-economic purpose for reuse system of wastewater in department project of Prototipo-Cero with Revit. 2021. Undergraduate Thesis (Construction Thesis) - Universidad Católica del Maule.
- Agredano, R.; **Morais, M.V.B.**; Escanilla, R. Candidate: Marcelo Nicolás Tapia Aliaga. Hydrological study in Maule-Medio sub basin for integrated basin model. 2021. Undergraduate Thesis (Civil Engineering) - Universidad Católica del Maule.
- **Morais, M.V.B.**; Carreño-Gutiérrez, R.; Cabrera-Lolic, H. Candidates: Daniela Sandra Fuentes Tobar & José Ignacio Díaz Gonzáles. Feasibility study of the implementation of a green facade in the Library building of the San Miguel campus of the Catholic University of Maule. 2021. Undergraduate Thesis (Construction Engineering) - Universidad Católica del Maule.
- Puerto, I.L.V.; **Morais, M.V.B.**; Valdes, H. Candidate: José Luis Campal Angulo. Evaluation of oxygen transfer in constructed wetlands aired for wastewater treatment in rural area. 2021. Undergraduate Thesis (Construction Engineering) - Universidad Católica del Maule.
- **Morais, F.V.B.**; Slipack, S.; **Morais, M.V.B.**. Candidate: Luiz Henrique Kusunoki. Profile optimization in inoxidizable steel for cold work. 2020. Undergraduate Thesis (Mechanical Engineering) - Centro de Ensino Superior de Maringá.
- **Morais, F.V.B.**; Rodrigues, A.; **Morais, M.V.B.**. Candidate: Vitor Belini Takahashi. Application of a centrifugal pump. 2020. Undergraduate Thesis (Mechanical Engineering) - Centro de Ensino Superior de Maringá.
- **Morais, F.V.B.**; **Morais, M.V.B.**; Rodrigues, A. Candidate: Tiago Vinicius do Nascimento Spricido. Radial Motor System Respirators. 2020. Undergraduate Thesis (Mechanical Engineering) - Centro de Ensino Superior de Maringá.
- **Morais, F.V.B.**; Slipack, S.; **Morais, M.V.B.** Candidate: Lucas Cardoso de Sá. Comparative analysis of cold runner and hot runner injection mold. 2020. Undergraduate Thesis (Mechanical Engineering) - Centro de Ensino Superior de Maringá.
- **Morais, F.V.B.**; **Morais, M.V.B.**; Slipack, S. Candidate: Rubens Augusto de Oliveira. Improvement proposal in furrower design. 2020. Undergraduate Thesis (Mechanical Engineering) - Centro de Ensino Superior de Maringá.
- **Morais, F.V.B.**; Slipack, S.; **Morais, M.V.B.** Candidate: Gabriel Lazarin Olini. Centrifugal Pump Project. 2020. Undergraduate Thesis (Mechanical Engineering) - Centro de Ensino Superior de Maringá.
- **Morais, F.V.B.**; Slipack, S.; **Morais, M.V.B.** Candidate: Allan Piva Netto. Technical and economic feasibility study between air conditioning systems. 2020. Undergraduate Thesis (Mechanical Engineering) - Centro de Ensino Superior de Maringá.
- **Morais, F.V.B.**; Slipack, S.; **Morais, M.V.B.** Candidate: Matheus de Matos Guaraldo. Structural analysis and static design of "I"beams in semi-trailers for transporting indivisible loads. 2020. Undergraduate Thesis (Mechanical Engineering) - Centro de Ensino Superior de Maringá.
- **Morais, F.V.B.**; Slipack, S.; **Morais, M.V.B.** Candidate: Pedro Henrique Risson Vicentino. Low power wind generator project. 2020. Undergraduate Thesis (Mechanical Engineering) - Centro de Ensino Superior de Maringá.
- **Morais, F.V.B.**; Rodrigues, A.; **Morais, M.V.B.** Candidate: Pedro Luis Andreatta Basso. Design of a cold room. 2020. Undergraduate Thesis (Mechanical Engineering) - Centro de Ensino Superior de Maringá.
- **Morais, F.V.B.**; Slipack, S.; **Morais, M.V.B.** Candidate: Vinicius Garcia Buck. Design and simulation for paint grid. 2020. Undergraduate Thesis (Mechanical Engineering) - Centro de Ensino Superior de Maringá.

- **Morais, F.V.B.; Slipack, S.;** **Morais, M.V.B.** Candidate: Vinicius Lucas Peraro Correa. Optimization of the agricultural gear manufacturing process. 2020. Undergraduate Thesis (Mechanical Engineering) - Centro de Ensino Superior de Maringá.
- **Morais, F.V.B.; Slipack, S.;** **Morais, M.V.B.** Candidate: Guilherme Vinicius Alves Feitosa. Improved hypochlorite generation. 2020. Undergraduate Thesis (Mechanical Engineering) - Centro de Ensino Superior de Maringá.
- **Morais, F.V.B.; Kaneko, G H.;** **Morais, M.V.B.** Candidate: de Carlos Felipe Cavalheiro Ramos. Analysis and design of air conditioning at the UAB Polo - Apucarana. 2020. Undergraduate Thesis (Mechanical Engineering) - Centro de Ensino Superior de Maringá.
- **Morais, F.V.B.; Kaneko, G.H.;** **Morais, M.V.B.** Candidate: Lucas Gil de Souza Barsaglia. Cold water air conditioning project. 2020. Undergraduate Thesis (Mechanical Engineering) - Centro de Ensino Superior de Maringá.
- **Morais, F.V.B.; Kaneko, G.H.;** **Morais, M.V.B.** Candidate: Amanda Moreira Carvalho. Dimensioning of a mechanical ventilation system in a sweetener industry. 2020. Undergraduate Thesis (Mechanical Engineering) - Centro de Ensino Superior de Maringá.
- **Morais, F.V.B.; Yamaguchi, N.U.;** **Morais, M.V.B.** Candidate: Lucas Naoto Taketa. Thermoenergetic evaluation of a commercial building via computer simulation. 2020. Undergraduate Thesis (Mechanical Engineering) - Centro de Ensino Superior de Maringá.
- **Morais, F.V.B.; Loureiro, L.T.;** **Morais, M.V.B.** Candidate: Maria Angélica Rubo. Cushioning system for ambulance stretchers. 2020. Undergraduate Thesis (Mechanical Engineering) - Centro de Ensino Superior de Maringá.
- **Morais, F.V.B.; Magan, M.V.;** **Morais, M.V.B.** Candidate: Leonardo Casagrande Tesch. Refrigeration system by absorption using solar energy. 2020. Undergraduate Thesis (Mechanical Engineering) - Centro de Ensino Superior de Maringá.
- **Puerto, I.L.V.; Correa-Becerra, C.;** **Morais, M.V.B..** Candidates: Jorge Rodriguez Salas & Sergio Villacura Poblete. Proposed modification in the operation of constructed subsurface vertical flow wetlands for the treatment of wastewater in rural areas. 2020. Undergraduate Thesis (Construction Engineering) - Universidad Católica del Maule.
- **Puerto, I.L.V.;** **Morais, M.V.B.;** **Correa-Becerra, C.** Candidates: Francisca Rebolledo & Valeria Valenzuela. Evaluation of vertical constructed wetlands planted with ornamental species for residual water treatment in Mediterranean climate zones. 2020. Undergraduate Thesis (Construction Engineering) - Universidad Católica del Maule.
- **Morais, M.V.B.;** **Puerto, I.L.V.;** **Olivari, C.L.;** **Hitschfeld, M.L.C.** Candidate: Francisca Jimena Parada Herrera. Implementation purpose of green roof in the Atmospheric Descontamination Plan in Talca, Chile. 2019. Qualifying Exam (Master in Sustainable Construction) - Universidad Católica del Maule.
- **Blanco-Fernandez, D.;** **Vilches-Tapia, J.;** **Morais, M.V.B..** Candidate: Ricardo Felipe Cofré Fernández. Thermal and Mechanical properties effect in Effect on the thermal and mechanical properties of the facing mortar, which generates the incorporation of wood biomass ash in the mortar mixtures. 2019. Qualifying Exam (Master in Sustainable Construction) - Universidad Católica del Maule.
- **Puerto, I.L.V.;** **Morais, M.V.B.;** **Correa-Becerra, C.** Candidate: Cristián Albornozy Ayala. Evaluation of the impact of rainwater harvesting systems on the provision of water for the rural sanitation service of the Vilches Alto sector, San Clemente Commune. 2019. Undergraduate Thesis (Construction Engineering) - Universidad Católica del Maule.
- **Cabreira, M.A.B.;** **Morais, M.V.B.;** **Cunha, P.A.** Candidates: Leonardo Alexandre da Silva and Bruno Bernardo Lopes. Electro-pneumatic Bottle Positioner. 2018. Undergraduate Thesis (Technology in Industrial Mechatronics) - Faculdade de Tecnologia.
- **Coraini, G.A.M.S.;** **Morais, M.V.B.;** **Mancuzo, E.** Candidates: Emerson Aparecido dos Santos and Gustavo Henrique da Silva Gomes. System that facilitates the opening of packages. 2017. Undergraduate Thesis (Technology in Industrial Mechatronics) - Faculdade de Tecnologia.

Academic Advisory

- 2021 - currently **Marcos Paulo Guimaraes Guerra.**
Project Title: Mining system and supervised machine learning to obtain and predict hailstorm occurrences data
Master Candidate in Environmental Engineering
Federal Technological University of Paraná (UTFPR)
Fellowship from Coordination of Superior Level Staff Improvement (CAPES).
(Advisor).
- 2021 - 2022 **Caroline de Almeida Campo.**
Project Title: Experimental development for validation of a math relationship between hailstone size and impact from a surface
Scientific Initiation Programme (undergraduate in Environmental Engineering)
Federal Technological University of Paraná (UTFPR)
Fellowship from Brazilian National Council for Scientific and Technological Development (CNPq)
(Advisor).
- 2021 - 2022 **Lilian Cristina Antunes.**
Project Title: Instalation and maintaince of a automatic network of electronic sensors to hailstorm detection
Scientific Initiation Programme (undergraduate in Environmental Engineering)
Federal Technological University of Paraná (UTFPR)
Fellowship from Brazilian National Council for Scientific and Technological Development (CNPq)
(Advisor).
- 2020 - 2021 **Thomas Verigin**
Project Title: Remote Sensing applications in Urban classification and Air quality
Student Exchange Programme (undergraduate in Civil Engineering)
Univesity of Victoria (Canada) and UCM (Chile)
(Advisor).
- 2020 - 2021 **Daniela Sandra Fuentes Tobar & José Ignacio Díaz Gonzáles**
Project Title: Feasibility study of the implementation of a green facade in the Library building of the San Miguel campus of the Catholic University of Maule
B.Eng. in Construction Engineering
Universidad Católica del Maule (UCM)
(Advisor).
- 2020 - 2021 **Magdalena Estrella Munoz Carrasco**
Project Title: Technical-economic analysis for green roof application in subsidy houses based on thermal comfort in the San Javier city
B.Eng. in Construction Engineering
Universidad Católica del Maule (UCM)
(Advisor).
- 2020 - 2021 **Beatriz Takara**
Project Title: Construction and validation of automatic hailmeters with electronic sensors
Scientific Initiation Programme (undergraduate in Environmental Engineering)
Federal Technological University of Paraná (UTFPR)
Fellowship from Brazilian National Council for Scientific and Technological Development (CNPq)
(Advisor).
- 2020 - 2021 **Eduardo Manfio**
Project Title: Proposal for the construction of an energy system and the validation of

automatic hailmeters.

Scientific Initiation Programme (undergraduate in Electronic Engineering)

Federal Technological University of Paraná (UTFPR)

Fellowship from Brazilian National Council for Scientific and Technological Development (CNPq)

(Advisor).

2019 - 2021

Otávio Medeiros Sobrinho

Project Title: *Air quality modeling for urban regions of Londrina and Curitiba*

M.Sc. in Environmental Engineering

Federal Technological University - Paraná (UTFPR)

Fellowship from Brazilian National Council for Scientific and Technological Development (CNPq)

(Co-Advisor).

2019 - 2020

Marcelo Nicolás Tapia Aliaga

Project Title: *Development of a database of classified satellite images for the Maule River basin.*

Scientific Initiation Programme (undergraduate in Civil Engineering)

Universidad Católica del Maule (UCM)

Internal Fellowship

(Advisor).

2017 - 2020

Ana Carolina Freitas Xavier

Project Title: *Probability of extreme weather events based on different rates of greenhouse gas emissions: non-linear modelling*

Ph.D in Tropical and Subtropical Agriculture

Agronomic Institute of Campinas (IAC)

Fellowship from Brazilian National Council for Scientific and Technological Development (CNPq)

(Co-Advisor).

2017 - 2018

Caio Ananias Alves

Project Title: *Development of an automatic hailmeter from electronic sensors*

Scientific Initiation Programme (undergraduate in Industrial Mechatronics Technology)

Faculdade de Tecnologia (FATEC)

Fellowship from Brazilian National Council for Scientific and Technological Development (CNPq)

(Advisor.)

2017 - 2018

Victor Alexandre Dodô da Silva

Project Title: *Development of a low cost anemometer using electromagnetic induction*

Scientific Initiation Programme (undergraduate in Industrial Mechatronics Technology)

Faculdade de Tecnologia (FATEC)

(Advisor).

2017 - 2018

Henrie Montes Doca Kushikawa

Project Title: *Evaluation of luminosity sensors for solar radiance measurements*

Scientific Initiation Programme (undergraduate in Industrial Mechatronics Technology)

Faculdade de Tecnologia (FATEC)

(Advisor).

2016 - 2018

Thais Fujita

Project Title: *Calibration and Validation of a Hydrological Model for Ivaí River Basin*

M.Sc. in Environmental Engineering

Federal University of Technology - Paraná (UTFPR)

Fellowship from Coordination of Superior Level Staff Improvement (CAPES)

(Co-Advisor).

2015 - 2016

Vanessa Yukie Yamanaka

Project Title: *Spatial and temporal analysis of the occurrence of hail in the South of Brazil from the Integrated Disaster Information System - Civil Defense.*

Scientific Initiation Programme (undergraduate in Environmental Engineering)

Federal Technologica University - Paraná (UTFPR)

Fellowship from Coordination of Superior Level Staff Improvement (CAPES)
(Advisor).

Professional Experience

2022 - currently

Oráculo Meteorologia

São Paulo, Brazil

Activity: Data science support for atmospheric dataset.

2019 - 2020

Universidad Católica del Maule (UCM)

Talca, Chile

Activity: Hydrodynamic study and technical proposal for management in the event of risks of flooding and water contamination in the Lake Vichiquén basin, Laguna Torca and Estero Llico

2013 - 2015

Climatempo Meteorological Consulting

São Paulo, Brazil

Activity: Expert in Numerical Modeling - working in the modelling department, researching and development in the operation and evaluation of atmospheric, hydrological and ocean models for forecasting.

Professional Development

2022

Introduction to Microsoft Azure Cloud
Microsoft Corporation (Coursera)

2021

Teaching at Higher Education
UNOPAR.

2021

Alteryx Bootcamp
Udemy.

2021

Data Scientist Formation
Udemy.

2021

Design Thinking
FIAP.

2021

Introduction to the Internet of Things and Embedded Systems
University of California Irvine.

2020

Effective communication techniques
SEMCE.

2020

Graph Analytics for Big Data
University of California San Diego.

2020

Machine Learning with Big Data
University of California San Diego.

2020	Big Data Integration and Processing University of California San Diego.
2020	Big Data Modelling and Management System University of California San Diego.
2020	Introduction to Big Data University of California San Diego.
2019	Formation in Online Education CEETEPS (Brazil).
2018	Introduction to Big Data IBM.
2017	Territorial Management of Water Resources National Water Agency (Brazil).
2015	Time Series in R State University of Londrina.
2015	Workshop of Oceanography and Modeling. Agência Clima tempo.
2014	Wave Modeling and Dynamics Workshop. WW3 Tutorial. National Institute of Space Research (Brazil)
2012	Workshop on Air Quality and WRF-Chem tutorial. Universidade de São Paulo.
2011	ArcGIS Desktop I e II Academia GIS Imagem.
2011	II Atmospheric Modeling school with the Brazilian Developments on the Regional Atmospheric Modelling System - BRAMS. National Institute of Space Research (Brazil)
2005	Topics of Applied Industrial Instrumentation State University of Maringá.
2005	Introduction to Geostatistical Methodology State University of Maringá.