

Luis Gustavo Gonçalves de Gonçalves

e-mail: luis.goncalves@cmcc.it; gustavo.degoncalves@gmail.com

EDUCATION

2000-2005 Ph.D. Hydrology, (final grade A)

Department of Hydrology and Water Resources, University of Arizona, Tucson, Arizona

Thesis Title: Land Surface-Atmosphere Interactions in Regional Modeling Over South America

Supervisor: Prof. William James Shuttleworth

1996-1998 M.Sc. Meteorology, (final grade A-)

Instituto Nacional de Pesquisas Espaciais (INPE), São José dos Campos, SP, Brazil

Dissertation Title: Use of Newtonian Relaxation Technique for Satellite Data Assimilation in a Limited Area Model

Supervisor: Dr. Valdir Innocentini

1992-1996 B.Sc. Meteorology, (final grade B+)

Universidade Federal de Pelotas, Pelotas, RS, Brazil

RESEARCH AND PROFESSIONAL EXPERIENCE

2010-present Faculty Professor

Centro de Previsão de Tempo e Estudos Climáticos (CPTEC) – Instituto Nacional de Pesquisas Espaciais (INPE)

Meteorology Graduate Program (M.Sc. and Doctoral)

2012-present Research Scientist Civil Servant

Centro de Previsão de Tempo e Estudos Climáticos (CPTEC) – Instituto Nacional de Pesquisas Espaciais (INPE)

Atmospheric and surface operational Global and Regional data assimilation, Head of data assimilation group, deputy chief of modeling and development division

2017-2018 Scholar Visiting Scientist (postdoc)

The University of Arizona, Tucson, AZ – Dept of Hydrometeorology

Land Surface Modeling and Data Assimilation over South America.

2010-2012 Brazilian Government Contractor

Centro de Previsão de Tempo e Estudos Climáticos (CPTEC) – Instituto Nacional de Pesquisas Espaciais (INPE)

Atmospheric and surface operational Global data assimilation, Head of data assimilation group

2007- 2010 Faculty Research Associate

Earth System Sciences Interdisciplinary Center (ESSIC), University of Maryland,

Hydrological Sciences Branch, NASA Goddard Space Flight Center, Greenbelt, Maryland

Land Surface Data Assimilation particularly in South America

2005-2007 Postdoc:

National Research Council/National Academy of Sciences and ORAU, Hydrological Sciences Branch, NASA Goddard Space Flight Center, Greenbelt, Maryland

Land Surface Data Assimilation particularly in South America

2000-2005 Research Assistant

Department of Hydrology and Water Resources, The University of Arizona, Tucson, AZ, USA.

Land Surface Data Assimilation, surface and hydrological model calibration and parameter estimation, land surface processes in South America (Amazonia), hydrometeorology.

1997-2000 Support Analyst for Meteorological Data

Centro de Previsão do Tempo e Estudos Climáticos (CPTEC/INPE) Cachoeira Paulista, Sao Paulo, Brasil.
Operational monitoring weather, atmospheric modeling development and evaluation.

PUBLICATIONS

Arsego, V.B.M., de Gonçalves, L.G.G., Arsego, D.A., Figueroa, S.N., Kubota, P.Y. and de Souza, C.R., 2023. Impact of Soil Moisture in the Monsoon Region of South America during Transition Season. *Atmosphere*, 14(5), p.804.

de Ávila, Á.V.A., de Gonçalves, L.G.G., Souza, V.D.A., Alves, L.E.R., Galetti, G.D., Maske, B.M., Getirana, A., Ruhoff, A., Biudes, M.S., Machado, N.G. and Roberti, D.R., 2023. Assessing the Performance of the South American Land Data Assimilation System Version 2 (SALDAS-2) Energy Balance across Diverse Biomes. *Atmosphere*, 14(6), p.959.

Souza, V. de A., Zimmer, T., Ruhoff, A. L., Tatsch, J. D., Stefanello, M. B., Veeck, G. P., Roberti, D. R., Moreira, V. S., Gonçalves, L. G. de and Alves, R. de C. M. (2023) “Calibration of the Priestley-Taylor parameter to estimate evapotranspiration in rice paddy areas”, *Ciência e Natura*, 45(esp. 2), p. e79096. doi: 10.5902/2179460X79096.

Xu, M., Yao, N., Yang, H., Xu, J., Hu, A., de Goncalves, L.G.G. and Liu, G., 2022. Downscaling SMAP soil moisture using a wide & deep learning method over the Continental United States. *Journal of Hydrology*, 609, p.127784.

Helena Barbieri De Azevedo, Luis Gustavo Gonçalves De Gonçalves, Eugenia Kalnay & Matthew Wespetal (2020) Dynamically weighted hybrid gain data assimilation: perfect model testing, *Tellus A: Dynamic Meteorology and Oceanography*, 72:1, 1-11, DOI: 10.1080/16000870.2020.1835310

Faggiani, A. P. da S., Quadro, M. F. L. de, Gonçalves, L. G. de G. de and Herdies, D. L. (2020) “Study of the components of the hydrological balance during episode of SACZ”, *Ciência e Natura*, 42, p. e14. doi: 10.5902/2179460X55315.

Goergen, G.; Valdés, R.H.; Degrazia, G.A.; Gotuzzo, R.A.; Herdies, D.L.; de Gonçalves, L.G.G.; Roberti, D.R. Energy and CO2 Fluxes over Native Fields of Southern Brazil through Multi-Objective Calibration of INLAND Model. *Geosciences* 2020, 10, 479. <https://doi.org/10.3390/geosciences10120479>

Bailing Li, Matthew Rodell, Sujay Kumar, Hiroko Kato Beaudoin, Augusto Getirana, Benjamin F. Zaitchik, Luis Gustavo de Goncalves, Camila Cossetin, Soumendra Bhanja, Abhijit Mukherjee, Siyuan Tian, Natthachet Tangdamrongsub, Di Long, Jamiat Nanteza, Jejung Lee, Frederick Policelli, Ibrahim B. Goni, Djoret Daira, Mohammed Bila, Gabriëlle de Lannoy, David Mocko, Susan C. Steele–Dunne , Himanshu Save, Srinivas Bettadpur, 2019. Global GRACE Data Assimilation for Groundwater and Drought Monitoring: Advances and Challenges. *Water Resources Research*. <https://doi.org/10.1029/2018WR024618>.

Souza, Vanessa de Arruda and Roberti, Débora Regina and Ruhoff, Anderson Luis and Zimmer, Tamíres and Adamatti, Daniela Santini and Gonçalves, Luis Gustavo G. de and Diaz, Marcelo Bortoluzzi and Alves, Rita de Cássia Marques and Moraes, Osvaldo L. L. de. 2019. Evaluation of MOD16 Algorithm over Irrigated Rice Paddy Using Flux Tower Measurements in Southern Brazil. *Water* 2019, 11(9), 1911; <https://doi.org/10.3390/w11091911>

de Azevedo, H., L. de Gonçalves, C. Bastarz, and B. Silveira, 2017: Observing System Experiments in a 3DVAR Data Assimilation System at CPTEC/INPE. *Weather and Forecasting*, 32, 873–880, doi: 10.1175/WAF-D-15-0168.1.

Calvetti, L.; Beneti, C.; Neundorf, R. L.; Inouye, R. T.; dos Santos, T. N.; Gomes, A. M.; Herdies, D. L.; de Gonçalves, L. G. G. Quantitative Precipitation Estimation (QPE) integrated by Poisson's Equation using Radar Mosaic, Satellite and Rain Gauge Network. *Journal of Hydrologic Engineering*.

Blacutt, L. A.; Herdies, D. L.; De Gonçalves, L. G. G.; Vila, Daniel; Andrade, M.F. Precipitation comparison for the CFSR, MERRA, TRMM3B42 and Combined Scheme datasets in Bolivia. *Atmospheric Research (Print)*, v. 163, p. 117131, 2015.

Penna, B. R.; Silveira, B. B.; De Gonçalves, L. G. G.; Souza, S. S. . Avaliação da Temperatura De Brilho nos Canais Sensíveis a Superfície Terrestre no Sistema G3dvar Do CPTEC/INPE: Série NOAA. Revista Brasileira de Meteorologia (Impresso), v. 30, p. 340-350, 2015.

Moreira, V. S.; Roberti, Débora R.; Minella, J. P.; Gonçalves, L. G. G.; Candido, L. A.; Fiorin, J.; Moraes, O. L. L. De Timm, A. . U.; Carlesso, R.; Degrazia, G. A. Seasonality of soil water exchange in the soybean growing season in southern Brazil. Scientia Agricola (USP. Press), v. 72, p. 103-113, 2015.

PALLOTTA, M.; HERDIES, D. L.; de GONÇALVES, Luis Gustavo Gonçalves . Estudo das Condições de Tempo e Conforto Térmico No Desempenho Esportivo Aplicado a Maratona da Cidade do Rio de Janeiro. Revista Brasileira De Meteorologia (Impresso), v. nd, p. 10-24, 2014.

Quadro, M.F.L. ;; Berbery, E. H. ;; Herdies, D. L. ;; De Gonçalves, Luis Gustavo Gonçalves . The atmospheric water cycle over South America as seen in the new generation of global reanalyses. AIP Conference Proceedings, v. 1531, p. 732735, 2013.

Pozzi, Will Sheffield, Justin Stefanski, Robert Cripe, Douglas Pulwarty, Roger Vogt, Jürgen V. Heim, Richard R. Brewer, Michael J. Svoboda, Mark Westerhoff, Rogier Van Dijk, Albert I. J. M. Lloydhughes, Benjamin Pappenberger, Florian Werner, Micha Dutra, Emanuel Wetterhall, Fredrik Wagner, Wolfgang Schubert, Siegfried Mo, Kingtse Nicholson, Margaret Bettio, Lynette Nunez, Liliana Van Beek, Rens Bierkens, Marc De Goncalves, Luis Gustavo Goncalves, et al. ;; Toward Global Drought Early Warning Capability: Expanding International Cooperation for the Development of a Framework for Monitoring and Forecasting. Bulletin of the American Meteorological Society, v. 94, p. 776785, 2013.

De Gonçalves, Luis Gustavo Gonçalves;; Borak, Jordan;; S. Costa, Marcos Heil;; Saleska, Scott;; R. Baker, Ian;; Restrepo-coupe, Natalia;; Muza, Michel Nobre;; Poulter, Benjamin;; Verbeeck, Hans;; Fisher, Joshua B.;; Arain, M. Altaf;; Arkin, Phillip;; Cestaro, Bruno P.;; Christoffersen, Bradley;; Galbraith, David;; Guan, Xiaodan;; Van Den Hurk, Bart;; J.J.M. Ichii, Kazuhito;; Imbuzeiro, Hewlley M. Acioli;; Jain, Atul;; K. Levine, Naomi;; Lu, Chaoqun;; Miguez-macho, Gonzalo;; Roberti, Débora R.;; Sahoo, Alok , et al. ;; Overview of the Large-Scale Biosphere Atmosphere Experiment in Amazonia Data Model Intercomparison Project (LBADMIP). Agricultural and Forest Meteorology (Print) , p. 111127, 2013.

Paiva, R. C. D.;; Collischonn, W. ;; Bonnet, M.P.;; De Gonçalves, L. G. G. ;; Calmant, S. ;; Getirana, A.;; Santos Da Silva, J. Assimilating in situ and radar altimetry data into a large scale hydrologic- hydrodynamic model for streamflow forecast in the Amazon. Hydrology and Earth System Sciences, v. 17, p. 29292946, 2013.

Von Randow, Celso Zeri, Marcelo Restrepo-coupe, Natalia Muza, Michel N. De Gonçalves, Luis Gustavo G. Costa, Marcos H. Araujo, Alessandro C. Manzi, Antonio O. Da Rocha, Humberto R. Saleska, Scott R. Arain, M. Alaf Baker, Ian T. Cestaro, Bruno P. Christoffersen, Bradley Ciaís, Philippe Fisher, Joshua B. Galbraith, David Guan, Xiaodan Van Den Hurk, Bart Ichii, Kazuhito Imbuzeiro, Hewlley Jain, Atul Levine, Naomi Miguez-macho, Gonzalo Poulter, Ben, et al. ;; Interannual variability of carbon and water fluxes in Amazonian forest, Cerrado and pasture sites, as simulated by terrestrial biosphere models. Agricultural and Forest Meteorology (Print) , v. 183, p. 145155, 2013.

Rosolem, Rafael ;; Gupta, Hoshin V. ;; Shuttleworth, W. James ;; Zeng, Xubin ;; De Gonçalves, Luis Gustavo Gonçalves. A fully multiplecriteria implementation of the Sobol method for parameter sensitivity analysis. Journal of Geophysical Research, v. 117, p. D07103, 2012.

Rosolem, Rafael;; Gupta, Hoshin V.;; Shuttleworth, W. James;; Gonçalves, Luis Gustavo Gonçalves;; Zeng, Xubin. Towards a comprehensive approach to parameter estimation in land surface parameterization schemes. Hydrological Processes (Print), 2012

Paiva, R. C. D.;; Collischonn, W.;; Bonnet, M. P.;; de Gonçalves, L. G. G.;;. On the sources of hydrological prediction uncertainty in the Amazon. Hydrology and Earth System Sciences , v. 16, p. 3127--3137, 2012.

Quadro, Mario Francisco Leal de;; Dias, Maria Assunção Faus da Silva;; Herdies, Dirceu Luis ;;Gonçalves, Luis Gustavo Gonçalves de. Análise climatológica da precipitação e do transporte de umidade na região da ZCAS através da nova geração de reanálises. Revista Brasileira de Meteorologia (Impresso), v. 27, p. 152-162, 2012.

Yatheendradas, Soni ;; Lidard, Christa D. Peters ;; Koren, Victor ;; Cosgrove, Brian A. ;; De Goncalves, Luis G. G. ;; Smith, Michael ;; Geiger, Jim ;; Cui, Zhengtao ;; Borak, Jordan ;; Kumar, Sujay V. ;; Toll, David L. ;; Riggs, George ;; Mizukami, Naoki. Distributed assimilation of satellite based snow extent for improving simulated streamflow in mountainous, dense forests: An example over the DMIP2 western basins. *Water Resources Research*, v. 48, p. W09557, 2012.

PAIVA, R. C. D.;; COLLISCHONN, W.;; Bonnet, M. P.;; Gonçalves, L. G. G. On the sources of hydrological prediction uncertainty in the Amazon. *Hydrology and Earth System Sciences Discussions (Online)*, v. 9, p. 3739-3760, 2012.

Rosero, Enrique;; Gulden, Lindsey E.;; Yang, ZongLiang;; De Goncalves, Luis G.;; Niu, Guo Yue;; Kaheil, Yasir H. Ensemble Evaluation of Hydrologically Enhanced Noah LSM: Partitioning of the Water Balance in High Resolution Simulations over the Little Washita River Experimental Watershed. *Journal of Hydrometeorology (Print)* , v. 12, p. 4564, 2011.

Berbery, E. H. ;; Herdies, D. L. ;; Domingos Alcaraz-Segura;; De Gonçalves, Luis Gustavo Gonçalves. The International Summer School on Land Cover Change and Hydroclimate of La Plata basin. *Exchanges (Hamburg. Print)*, v. 57, p. 56, 2011.

Rozante, José Roberto;; Moreira, Demerval Soares;; de Goncalves, Luis Gustavo G.;; Vila, Daniel A.. Combining TRMM and Surface Observations of Precipitation: Technique and Validation over South America. *Weather and Forecasting*, v. 25, p. 885-894, 2010.

TIMM, A. U.;; MOREIRA, V. S.;; ROBERTI, D.;; WEBLER, G. ;; SILVEIRA, M. C. ;; TEICHRIB, C. A. ;; de Goncalves, L. G. G. Validação dos dados do SALDAS para a região central do Rio Grande do Sul. *Ciência e Natura*, v. 33, p. 207-210, 2010.

Martins, C. A.;; Moraes, O. L. L.;; Roberti, D.;; Acevedo, O.;; de Goncalves, Luis Gustavo G. Calibração do Modelo de Interação de superfície atmosfera (SIB2) para uma plantação de arroz na região central do Rio Grande do Sul. *Ciência e Natura*, v. esp, p. 261-264, 2009.

de Gonçalves, Luis Gustavo Gonçalves;; Shuttleworth, William J.;; Vila, Daniel;; Larroza, Eliane;; Bottino, Marcus J.;; Herdies, Dirceu L.;; Aravequia, Jose A.;; De Mattos, Joao G. Z.;; Toll, David L.;; Rodell, Matthew;; Houser, Paul. The South American Land Data Assimilation System (SALDAS) 5Yr Retrospective Atmospheric Forcing Datasets. *Journal of Hydrometeorology*, v. 10, p. 999, 2009.

Vila, Daniel A.;; de Goncalves, Luis Gustavo G. ;; Toll, David L.;; Rozante, Jose Roberto. Statistical Evaluation of Combined Daily Gauge Observations and Rainfall Satellite Estimates over Continental South America. *Journal of Hydrometeorology* , v. 10, p. 533, 2009.

GORGEN, Guilherme;; ROBERTI, D.;; de GONÇALVES, Luis Gustavo Gonçalves. Estimativa da evapotranspiração sobre a Bacia do Prata utilizando climatologia do IAF. *Ciência e Natura*, v. 00, p. 77-80, 2009.

ROBERTI, D.;; de GONÇALVES, Luis Gustavo Gonçalves;; MORAES, O. L. L. ;; TEISCHRIEB, Cláudio ;; ZIMMERMANN, Hans ;; TIMM, andrea;; WEBLER, Geovane. Estimativa dos fluxos superficiais de energia e massa na região do pampa gaúcho. *Ciência e Natura*, v. 00, p. 105-108, 2009.

TIMM, andrea ;; ROBERTI, D. ;; de GONÇALVES, Luis Gustavo Gonçalves ;; TEISCHRIEB, Cláudio ;; ZIMMERMANN, Hans ;; MOREIRA, Virnei ;; RODRIGUES, Nélia ;; DEGRAZIA, Gervásio . Estimativa dos fluxos superficiais de energia utilizando o modelo de superfície Noah. *Ciência e Natura*, v. esp, p. 121-124, 2009.

Aravequia, J.A.;; HERDIES, D. L.;; SAPUCCI, L. F.;; FERREIRA, S.H.S.;; de Goncalves, Luis Gustavo G. Reanálise Regional 2000-2004 sobre a América do Sul com o Modelo RPSAS/ETA: Descrição do Experimento e dos Produtos Derivados. *Boletim da Sociedade Brasileira de Meteorologia*, v. 32, p. 71--77, 2008.

Rosolem, Rafael;; Shuttleworth, William James;; de Gonçalves, Luis Gustavo Gonçalves. Is the data collection period of the Large-Scale Biosphere-Atmosphere Experiment in Amazonia representative of long-term climatology? *Journal of Geophysical Research*, v. 113, p. G00B09, 2008.

de Gonçalves, Luis Gustavo Gonçalves;; E J Burke;; W J Shuttleworth;; P. Houser;; D. Toll;; K. Arsenault . Towards a South America Land Data Assimilation System (SALDAS): Aspects of Land Surface

Model Spin Up Using the Simplified Simple Biosphere Model (SSiB). *Journal of Geophysical Research*, v. 111, p. D17110, 2006.

de Gonçalves, Luis Gustavo Gonçalves;; W J Shuttleworth;; S. C. Chou;; Y Xue;; P. Houser ;; D. Toll ;; J A Marengo ;; M Rodell . Impact of different initial soil moisture fields on Eta model weather forecasts for South America. *Journal of Geophysical Research*, v. 111, p. D17102, 2006.

de Gonçalves, Luis Gustavo Gonçalves;; W J Shuttleworth ;; B Nijssen ;; E J Burke ;; J A Marengo ;; S. C. Chou ;; P. Houser ;; D. Toll . Evaluation of model-derived and remotely sensed precipitation products for continental South America. *Journal of Geophysical Research*, v. 111, p. D16113, 2006.

de Gonçalves, Luis Gustavo Gonçalves;; E J Burke;; W J Shuttleworth ;; C S Chan ;; J A Marengo . Application of Improved Ecosystem Aerodynamics in Regional Weather Forecasts. *Ecological Applications*, v. 14, p. 17-21, 2004.

P. Satyamurty;; J F B Fonseca;; M J Bottino;; M E Seluchi;; M C M Lourenco;; de Gonçalves, Luis Gustavo Gonçalves . An early freeze in southern Brazil in April 1999 and its NWP guidance. *Meteorological Applications*, v. 9, p. 113-128, 2002.

Gonçalves, Luis Gustavo Gonçalves de;; Innocentini, Valdir. Uso da técnica de Relação de Newton para assimilação de dados de satélite em um modelo de área limitada. *Revista Brasileira de Geofísica*, v. 17, p. 219, 1999.

ACADEMIC EXPERIENCE

Masters and Doctoral Advisor – Concluded

Helena Barbieri de Azevedo, Doctoral. (Meteorology) Dynamic Adjusting for a Hybrid Analysis Between a Variational System and the Ensemble Kalman Filter (in Portuguese), 2018. Center for Weather Forecast and Climate Studies (CPTEC), National Institute for Space Research (INPE)

Bruna Barbosa Silveira, Doctoral, Influence of the Microwave Emissivity Model over Land in the Radiances Data Assimilation over South America , 2018. Center for Weather Forecast and Climate Studies (CPTEC), National Institute for Space Research (INPE).

Luis Alberto Blacutt Benavides, Doctoral, Influence of the land surface processes in the air temperature and precipitation over central Andes and western Amazonia, 2017. Center for Weather Forecast and Climate Studies (CPTEC), National Institute for Space Research (INPE).

Bianca Buss Maske, MSc. (Meteorology) Study of the impact of remote sensed soil moisture data assimilated in the CPTEC/INPE AGCM/SSiB forecasts using ensemble kalman filter (in Portuguese), 2016. Center for Weather Forecast and Climate Studies (CPTEC), National Institute for Space Research (INPE).

Joao Gerd Zell de Mattos, Doctoral (Meteorology). The use of near surface data assimilation to improve global numerical weather prediction (in Portuguese), 2016. Center for Weather Forecast and Climate Studies (CPTEC), National Institute for Space Research (INPE)

Leonardo Ribeiro Paraiso Araujo, MSc. (Meteorology) Effects of thermal roughness length parameterizations in the skin temperature estimation in the SSiB in the Global 3DVar (in Portuguese), 2015. Center for Weather Forecast and Climate Studies (CPTEC), National Institute for Space Research (INPE)

Helena Barbieri de Azevedo, MSc. (Meteorology) Impact of observing systems in the Global variational data assimilation at CPTEC/INPE (in Portuguese), 2014. Center for Weather Forecast and Climate Studies (CPTEC), National Institute for Space Research (INPE)

Brunna Romero Penna, MSc. (Meteorology) The land surface temperature and role of the surface parameterization in CPTEC/INPE Global model radiance data assimilation (in Portuguese). 2014 Center for Weather Forecast and Climate Studies (CPTEC), National Institute for Space Research (INPE)

Mariana Pallota, MSc. (Meteorology) Analysis of the influence of meteorological conditions in the practice of sports in the city of Rio de Janeiro. A prognostic study applied to Sports (in Portuguese). 2013 Center for Weather Forecast and Climate Studies (CPTEC), National Institute for Space Research (INPE)

Fábio Luiz Rodrigues Diniz, MSc. (Meteorology) Observation impact in short range weather forecasts Impacto das Observações nas Previsões de Curto Prazo (in Portuguese). 2012 Center for Weather Forecast and Climate Studies (CPTEC), National Institute for Space Research (INPE)

Guilherme Goergen. Msc. (Meteorology) Use of leaf area index derived from remote sensing for evapotranspiration estimates over the La Plata Basin (in Portuguese), 2010 Federal University of Santa Maria

Felipe Mantovani, Undergraduate, Use of soil moisture for continental scale drought monitoring in South America, 2021, National Institute for Space Research (INPE)

Giovana Galletti, Masters, ESA-CCI soil moisture data assimilation in the South American Land Data Assimilation System (SALDAS), 2021 National Institute for Space Research (INPE)

Vivian Bauce Machado, Doctoral, Land surface data assimilation in support of operational seasonal forecast at CPTEC/INPE, 2022 National Institute for Space Research (INPE)

Bianca Buss Maske, Doctoral, Land surface-atmosphere feedbacks over South America using GRACE and soil moisture satellite data assimilation, 2023 National Institute for Space Research (INPE)

Álvaro Dias, Doctoral, Role of satellite retrieved radiation in land surface processes and data assimilation over South America, 2023 National Institute for Space Research (INPE)

Masters and Doctoral Advisor – Current

Laurizio Alves, Doctoral, Impact of remotely sensed greenness vegetation fraction in the land atmosphere interactions over South America.

Postdoctoral Supervisions - Concluded

Camila Cossetin Ferreira – Use of EnKF data assimilation cycle for optimal initial conditions to the Global Seasonal Forecast System at CPTEC/INPE. Center for Weather Forecast and Climate Studies (CPTEC), National Institute for Space Research (INPE)

Jordan Borak (2011) – The LBA Model Intercomparison Project (NASA Terrestrial Ecology) - National Aeronautics and Space Administration - Headquarters, Goddard Space Flight Center

Michel N. Muza (2010) - The LBA Model Intercomparison Project (NASA Terrestrial Ecology) - National Aeronautics and Space Administration - Headquarters, Goddard Space Flight Center

Research Projects

2022-current Copernicus Climate Change Service Evolution (CERISE) - grant agreement No101082139 funded by the European Union

2019-current Combining Cosmic Ray Neutron Sensor Information, Remote Sensing and Modeling for Decision Support in Brazilian Agriculture (PI) – UN/IAEA/FAO Funded

2014-2018 Support to nowcasting using rapid update cycle data assimilation over South America (PI) – Brazil CNPq Funded

2010-2014 Assimilation of GNSS radio-occultation using local ensemble transform kalman filter (Co-PI) – Brazil FAPESP Funded

2009–2013 Integrating NASA Earth Sciences Research results into Decision Support Systems for Agriculture and Water Management in South America (PI) – US NASA Funded

2009-2014 The Large Scale Model Intercomparison Project (PI) – US NASA Funded

2008 – 2012 The Impact of Land Cover and Land Use Changes on the Hydroclimate of the La Plata Basin (Co-PI) – US NOAA Funded

2008 – 2011 Evaluation and assimilation of NASA's remote sensing products in support of science activities in the La Plata Basin Continental Scale Experiment funding opportunity (NNH05ZDA001N-THP: Terrestrial Hydrology) (Collaborator) – US NASA Funded

2007–2010 Land Information System Development, Application and Validation for Improving Ensemble Hydrologic Prediction in Support of NOAA NWSRFS, IGES (Collaborator) US – NOAA Funded