

CURRICULUM VITAE

FERNANDO DE SALES

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I. EDUCATION

A. <u>Institution</u>	<u>Years Attended</u>	<u>Degree</u>	<u>Major Fields</u>
University of California, Los Angeles	2000-2016	Ph.D.	Geography
Universidade de São Paulo	1998-2000	M.S.	Atmospheric Sciences
Universidade de São Paulo	1994-1998	B.S.	Atmospheric Sciences

B. Dissertation Title

Examining the impacts of dynamic downscaling method and vegetation biophysical processes on the South American regional climate simulation. (Ph.D. Advisor: Dr. Yongkang Xue)

II. ACADEMIC POSITIONS AND RANKS HELD

<u>Institution</u>	<u>Rank</u>	<u>Dates</u>	<u>Major Subject</u>
San Diego State University	Assistant Professor	2015-present	Geography
University of California, Los Angeles	Assistant Researcher	2013-2015	Geography
University of California, Los Angeles	Assistant Adjunct Professor	2013-2015	Geography
University of California, Los Angeles	Staff Research Associate	2008-2012	Geography
University of California, Los Angeles	Post-doctoral Scholar	2006-2008	Atmospheric Science
University of California, Los Angeles	Graduate Student Researcher	2000-2006	Geography
Universidade de São Paulo	Graduate Student Researcher	1998-2000	Atmospheric Science
Universidade de São Paulo	Undergraduate Student Researcher	1996-1997	Atmospheric Science

III. TEACHING EFFECTIVENESS

COURSES TAUGHT AT SAN DIEGO STATE UNIVERSITY

- **GEOG 101 – Earth’s Physical Environment**

This course is a gateway to physical geography. It is designed to introduce students to questions regarding the spatial distribution of climate, water, soil, topography, and biota at the Earth’s surface, the functional interactions between them, and their relationships with people. It will also describe the basic forces governing the distribution and flow of mass and energy over the Earth’s surface, and will employ knowledge of those processes to introduce students to the major current environmental problems including climate change, pollution and biological conservation.

COURSES IN DEVELOPMENT AT SAN DIEGO STATE UNIVERSITY

- **GEOG 596 – Introduction to Biophysical Modeling of Land-Atmosphere Interaction Processes**

This new GEOG 596 course was originally proposed in Spring 2015. This course is designed to present students to the nature, principles, and modeling of land-atmosphere interaction processes including energy, water, and carbon transfers. One of the outcomes of the course is the introduction of computer modeling to assess and predict the physical interactions between the atmosphere and the vegetation. This information will be useful for future scientists and engineers working on climate change assessments and mitigation, and its impact on the natural environment.

COURSES AT UNIVERSITY OF CALIFORNIA, LOS ANGELES

- **GEOG 102 – Tropical Climatology**

This course address nature and physical principals of climatology in the Tropics. The course presents background information to show and to help the student to understand the development of tropical climates. The student will be able to discuss the factors that are necessary to the formation of tropical climate - temperature, wind, precipitation; and to learn the major tropical climatic phenomena that have global influences such as ENSO and monsoons. The course also examines the human interactions with the tropical climates and in the assesses the problem of human-induced climate change - e.g. deforestation and the enhanced greenhouse effect.

GUEST LECTURES

- GEOG 104 – Climatology (2006 – 2015). University of California, Los Angeles – Geography Department.
- GEOG 206 – Introduction to Biophysical Modeling of Land Surface Processes (2006 – 2010). University of California, Los Angeles – Geography Department.

IV. PROFESSIONAL GROWTH

PUBLICATIONS

Refereed Journal Articles

1. Yu Gu, Xue Y, **De Sales F**, Liou KN (2015) A GCM investigation of dust aerosol impact on the regional climate of North Africa and South/East Asia. *Climate Dynamics*. DOI: 10.1007/s00382-015-2706-y
2. **De Sales F**, Xue Y, Okin GS (2015) Impact of burned areas on the northern African seasonal climate from the perspective of regional modeling. *Climate Dynamics*. DOI: 10.1007/s00382-015-2522-4
3. Oaida CM, Xue Y, Flanner MG, Skiles SM, **De Sales F**, Painter TH (2014) Investigating physical snow processes including aerosol using an enhanced WRF/SSiB model. *Journal of Geophysical Research*. DOI: 10.1002/2014JD022444

4. De Haan LL, Kanamitsu M, **De Sales F**, Sun Liqiang S (2014) An evaluation of the seasonal added value of downscaling over the United States using new verification measures. *Theoretical and Applied Climatology*. DOI 10.1007/s00704-014-1278-9.
5. Xue Y, Jajnic Z, Dudhia J, Vasic R, **De Sales F** (2014) A review on regional dynamical downscaling in intra-seasonal to seasonal simulation/prediction and major factors that affect downscaling ability. *Atmospheric Research*. 147-148, 68-85
6. Hagos S, Leung LR, Xue Y, Boone A, **De Sales F**, Neupane N, Huang M, Yoon J (2014) Assessment of uncertainties in the response of the African monsoon precipitation to land use change simulated by a regional model. *Climate Dynamics*. DOI 10.1007/s00382-014-2092-x
7. **De Sales F** and Xue Y (2013) Dynamic downscaling of 22-year CFS winter seasonal forecasts with the UCLA-ETA regional climate model over the United States. *Climate Dynamics*. 41: 255-275. DOI: 10.1007/s00382-012-1567-x
8. **De Sales F** and Xue Y (2011) Assessing the dynamic-downscaling ability over South America using the intensity-scale verification technique. *International Journal of Climatology*, 31: 1205–1221. doi: 10.1002/joc.2139.
9. Waliser DE, Kim J, Xue Y, Chao Y, Eldering A, Fovell R, Hall A, Li Q, Liou K, McWilliams J, Kapnick S, Vasic R, **De Sales F**, Yu Y (2011) Simulating the Sierra Nevada snowpack: The impact of snow albedo and multi-layer snow physics. *Climatic Change*. 109, S59-S117, DOI 10.1007/s10584-011-0312-5.
10. Ma HY, Mechoso CR, Xue Y, Xiao H, Wu CM, Li JL, **De Sales F** (2011) Impact of land surface processes on the South American warm season climate. *Climate Dynamics*. 37, pp. 187-203. DOI: 10.1007/s00382-010-0813-3
11. Xue Y, **De Sales F**, et al. (2010) Intercomparison of West African Monsoon and its variability in the West African Monsoon Modeling and Evaluation Project (WAMME) First Experiment. *Climate Dynamics*. DOI:10.1007/s00382-010-0778-2.
12. Xue Y, **De Sales F**, Vasic R, Mechoso CR, Arakawa A, Prince S (2010) Global and temporal assessment of Interactions between climate and vegetation biophysical process: A GCM study with different land-vegetation representations. *Journal of Climate*. 23, 1411–1433.
13. Rian S, Xue Y, MacDonald G, Toure M, Yu Y, **De Sales F**, Levine P, Doumbia S, Taylor C (2009) Analysis of Climate and Vegetation Characteristics along the Savanna–Desert Ecotone in Mali Using MODIS Data. *GIScience & Remote Sensing*. 46, 424-450.
14. Ma HY, Mechoso CR, Xiao H, Wu CM, Xue Y, **De Sales F** (2010) Connection between the South Pacific anti-cyclone, Peruvian Stratocumulus and the South American Monsoon System. *CLIVAR Exchanges* 15(2) 16-18.
15. **De Sales F** and Xue Y (2006) Investigation of seasonal prediction of the South American regional climate using the nested model system. *Journal of Geophysical Research* 111, D20107, doi: 10.1029/2005JD006989.
16. Xue Y, **De Sales F**, Li WP, Mechoso CR, Nobre CA, Juang HM (2006) Role of land surface processes in South American monsoon development. *Journal of Climate* 19, 741–762.
17. **De Sales F** and Pereira Filho A (2005) Study of a Long-Lived Symmetric Squall Line in Southeast Brazil. *Brazilian Journal of Meteorology* 20(3), 421-436.

Refereed Journal Articles (In Preparation)

1. Xue Y, **De Sales F**, et al. (2015) West African monsoon decadal variability and drought and surface-related forcings: Second West African Monsoon Modeling and Evaluation Project Experiment (WAMME 2). Submitted to Climate Dynamics. Under review.
2. Boone A, Xue Y, **De Sales F**, et al. (2015) The regional impact of Land-Use Land-cover Change (LULCC) over West Africa from an ensemble of global climate models under the auspices of the WAMME2 project. Submitted to Climate Dynamics. Under review.
3. Xue Y, Oaida C, Diallo I, Neelin J, Li S, **De Sales F**, Gu Y, Robinson D, Vasic R, Lan Y (2015) Spring Land Temperature Anomalies in Northwestern U.S. and Southern Plains Summer Drought. Under review on Environmental Research Letters.

Non-Refereed Publications

1. Waliser, D, Kim J, Xue Y, Chao Y, Eldering A, Fovell R, Hall A, Li Q, Liou KN, McWilliams J, Kapnick S, Vasic R, **De Sales F**, Yu Y (2009) Simulating the Sierra Nevada Snowpack: The Impact of Snow Albedo and Multi-Layer Snow Physics. In the 2009 Climate Action Team Report to the Governor and Legislature. California Energy Commission and Environmental Protection Agency. www.climatechange.ca.gov/publications/cat/index.html.
2. **De Sales, F.** (2006) Examining the impacts of dynamic downscaling method and vegetation biophysical processes on the South American regional climate simulation. Doctoral Dissertation. University of California. Los Angeles. CA
3. Xue Y, Li WP, **De Sales F**, Mechoso CR, Juang HMH, Nobre C (2004) Land surface processes and monsoon. Proceedings CD-ROM of the 6th International Study Conference of GEWEX in Asia and GAME, December 3-5, 2004, Kyoto, Japan, GAME CD-ROM Publication N. 11, T1YX30Jul04034458.

Conference Presentations (last 5 years)

1. **De Sales F**, Okin G, Xue Y, Dintwe K (2015) Assessing the Effects of Burned Areas on the Northern and Southern African Seasonal Climates: A Regional Modeling Study. *American Geophysical Union Fall Meeting* (San Francisco, 2015).
2. Xue Y, Oaida C, Diallo I, Vasic R, Neelin JD, Li S, Lee JW, **De Sales F**, Li W, Robinson D (2015) Spring Land Temperature Anomalies in Northwestern U.S. and Southern Plains Summer Extreme: Texas Droughts and Floods. *American Geophysical Union Fall Meeting* (San Francisco, 2015).
3. Okin G, Dintwe K, Saha M, Scanlon T, D’Odorico P, **De Sales F**, Xue Y (2015) The Impact of Fire on Energy Balance in Southern African Savanna Ecosystems: Implications of Climate Chang. *American Geophysical Union Fall Meeting* (San Francisco, 2015).
4. **De Sales F**, Xue Y, Wang Y, Lee JW, Marx L, Ek M (2015) Decadal climate simulation using the Climate Forecast System coupled to the SSiB surface model. *Third Decadal and Regional Climate Prediction using Earth System Models PI meeting* (Washington DC, 2015)
5. **De Sales F**, Xue Y (2014) Impact of burned area on the African seasonal climate from the perspective of regional modeling. *American Geophysical Union Fall Meeting* (San Francisco, 2014)
6. **De Sales F**, Xue Y (2013) Assessing the effects of burned areas on the seasonal precipitation in Africa.

American Geophysical Union Fall Meeting (San Francisco, 2013)

7. **De Sales F, Xue Y (2011)** Dynamic downscaling of CFS winter seasonal simulations over the United States using the ETA/SSIB-3 model. *World Climate Research Program Open Science Conference (Denver, 2011)*
8. **De Sales F, Xue Y (2011)** Assessing a regional climate model's downscaling ability in reproducing the seasonal precipitation and inter-annual precipitation variability over South America with the intensity-scale verification technique. *The American Geophysical Union Meeting of the Americas (Foz do Iguacu, 2010)*
9. **De Sales F, Xue Y (2011)** On the usage of GCM to assess the spatial and seasonal characteristics and uncertainty of climate and vegetation biophysical process feedbacks. *The American Geophysical Union Meeting of the Americas (Foz do Iguacu, 2010)*

Invited Presentations

1. **De Sales, F (2012)** The impact of vegetation biophysical process feedbacks and dynamic downscaling on seasonal climate and its predictability. Colloquium, Department of Geography, University of California, Santa Barbara, Santa Barbara, CA

FUNDED RESEARCH

- 2016-2017 Principal Investigator: Impacts of climate change on Southern California's groundwater storage from the perspective of regional climate modeling. SDSU University Grant Program. \$9,014.
- 2014-2018 Co-PI: EaSM-3 – Collaborative Research: Surface-induced forcing and decadal variability and change of the East Asian climate, surface hydrology and agriculture – A modeling and data approach. National Science Foundation. Lead \$2,150,000. Co PI. Lead PI: Yongkang Xue - UCLA.

PENDING GRANTS

- 2015 Co-PI: Climate Change, Social Change and Sustainability of the Guadalupe Valley Wine Region, Baja California, Mexico. National Science Foundation – Coupled Natural and Human Systems. Lead PI: David Lipson – SDSU

SCHOLARLY AWARDS

- 2015 Research start-up funds. Vice President for Research, San Diego State University, \$25,000.
- 2009 University of California, Los Angeles Staff Achievement Award.
- 2005-2006 University of California, Los Angeles Dissertation Year Fellowship.

PROFESSIONAL MEMBERSHIP

- 2005-present American Geophysical Union
- 2004-2010 American Meteorological Society

MANUSCRIPT REVIEWS

Reviews for Academic Refereed Journals

- *Climate Dynamics - Springer Berlin / Heidelberg*
- *Journal of Climate - American Meteorological Society*
- *Journal of Geophysical Research - American Geophysical Union*
- *Atmospheric Research – Elsevier*
- *Journal of Hydrometeorology – American Meteorological Society*
- *Climate Change - Springer Netherlands*
- *International Journal of Climatology – Royal Meteorological Society*

V. SERVICE

Service for the University

- 2015-present: Internal Resources Committee, Department of Geography, SDSU
- 2015-present: Public Relations Committee, Department of Geography, SDSU
- 2015-present: Faculty, Center for Climate and Sustainability Studies, SDSU
- 2015-present: Researcher, Center for Information Convergence and Strategy, SDSU

Service for the Profession and Community

- 2013-2015: Judge for the American Geophysical Union Fall Meeting Outstanding Student Paper Award