

CURRICULUM VITAE

José Manuel Gálvez

PhD Candidate

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UNIVERSITY EDUCATION

- Dec. 2011** **PhD in Meteorology at the University of Oklahoma, Norman, OK, USA.**
Dissertation: Turbulent transfer across the urban canopy via sonic anemometer and scintillometer measurements. Work also explores the reliability of scintillometer measurements over the highly complex urban canopy. Results are addressed in the context of potential improvements to parameterizations designed for Mesoscale Models. Defense passed. GPA: 3.57. Final version of dissertation to be completed by Nov. 2011.
- 2005** **M.S. in Meteorology at the University of Oklahoma, Norman, OK, USA.**
Thesis: Modulation of rainfall by the South American Altiplano Lakes via observations and numerical simulations with the WRF model. Research focused on understanding the mechanisms that suppress or enhance precipitation over Lake Titicaca, Peru/Bolivia.
- 2000** **B.S. in Science at Universidad Nacional Agraria La Molina, Lima, Peru.**
Specialization in Meteorology. 2nd highest GPA-equivalent among Science Graduates, 1st in Meteorology.

EMPLOYMENT

- 2007-2011** **Graduate Research/Teaching Assistant at the University of Oklahoma, USA.**
Aside from Doctoral research, participated on the design, development and execution of field campaigns in the Americas and in Europe. This included instrument mast design and assistance on the calibration and setup of scintillometers and sonic anemometers. In charge of the organization of the Measurements Laboratory at the School of Meteorology. Served as laboratory or principal instructor for 5 courses designed for sophomore and junior-level meteorology students. These courses included "Introduction to Meteorology for Majors I", "Introduction to Meteorology for Majors II and the laboratory session of "Meteorological Measurements". Supervisor: Dr. Petra Klein. Norman, OK, USA.
- 2002-2007** **Graduate Research Assistant at the University of Oklahoma CIMMS, USA.**
Aside from Masters Research participated several projects such as PACS-SONET 1996-2005, SALLJEX 2002-3, NAME 2004 and NAMMA 2006. Work involved participation in the design, development and execution of field campaigns; and on campaign data post-processing including quality control, research and display; website development and maintenance. Examples can be found at: <http://www.nssl.noaa.gov/projects/pacs/> and <http://www.nssl.noaa.gov/projects/pacs/web/ALTIPLANO/>. Field campaign work involved travel to Latin America and Africa, namely Mexico, Peru, Bolivia, Senegal, Guinea and Mali. Research concentrated on the understanding of processes that modulate precipitation in the South American Altiplano, with emphasis on the role of lake-induced mesoscale circulations over Lake Titicaca and the Salar de Uyuni on the modulation of precipitation. Worked on the development of climatologies using satellite imagery, e.g.: <http://www.nssl.noaa.gov/projects/pacs/web/VOCALS/>. Participated in the development of educational material in sciences. An example is available at: <http://www.nssl.noaa.gov/projects/pacs/salljex/archive/manuals/manual-teodolitos-v1.2.html>. Work under the supervision of Dr. Michael Douglas. Norman, OK, USA. Employment period: August 2002-June 2007.

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- 2000-2002 Research Assistant at Instituto Geofísico del Perú, Lima, Peru.**
Worked with the MM5 Model and with weather and climate data. Focus on rainfall over Northern Peru and the Central Andes, and the effects of El Niño on the weather and climate of Peru. Work included statistical analysis of rainfall using observations and global reanalysis data. Also worked on real time weather and climate forecasts for Peru. Website development: <http://www.met.igp.gob.pe>. Supervisor: PhD. Pablo Lagos. Employment period: January 2000-June 2002.
- 1999 Internship at Instituto Geofísico del Perú, Lima, Peru.**
Worked with the MM5 Model and weather forecasting. Also worked on real time weather and climate forecasts for Peru, website articles, development and maintenance. Supervisor: PhD. Pablo Lagos. Employment period: January-June 1999.
- 1997 Bilingual Receptionist at Hotel El Condado, Lima, Peru.**
Employment period: February-March, 1997.

ADDITIONAL TRAINING

- 2008 Les Houches Summer School in Atmospheric Boundary Layers, France.**
Summer school on Concepts, Observations and Numerical Simulations of the Atmospheric Boundary Layer. Carried out at Les Houches, France during 17-27 June 2008. Website: <http://www.phys.uu.nl/~dop/summerschool/home.html>.
- 2002 SALLJEX training on pilot balloon and radiosonde observations, Bolivia.**
SALLJEX campaign training. San Ignacio, Bolivia. February 2002.
- 1999-2000 Numerical Weather Prediction Course, Weather Service, Peru.**
Successful completion of a 9-month Course carried out in Peru's National Weather Service (SENAMHI) as part of the project "Mejoramiento de la Capacidad de Pronóstico para la Prevención y Mitigación de Desastres en el Perú". September 1999 through May 2000. Lima, Peru. See awards section.

AWARDS

- 2001 Visiting scientist, Pennsylvania State University, State College, PA.**
Achieved based on the high performance attained in the Course "Mejoramiento de la Capacidad de Pronóstico para la Prevención y Mitigación de Desastres en el Perú" conducted at Peru's Weather Service SENAMHI. Worked with simulations over Peru using MM5. January-June 2001.

AREAS OF CURRENT INTEREST

- **Development of educational material.**
Application of computing, graphic design, science knowledge and teaching experience into the development of educational material. This includes the development of manuscripts, figures, presentations, websites and videos for different audiences. Development of cartoons for science education.
- **Teaching.**
Flexible to teach audiences of different kinds, from kids to college students.
- **Reconstruction of climate databases.**
Example: development of Atlases.
- **Topics of particular interest:**
Climate, Climate change. Rainfall and Hydrology. El Niño. Weather and Climate of South America. Synoptic and mesoscale processes. Boundary-Layer and Urban Meteorology. Physical Geography.

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TEACHING

TEACHING EXPERIENCE

- 2011, Summer** **Introduction to Meteorology for Majors II, School of Meteorology, University of Oklahoma, Norman, Oklahoma, USA.**
Main instructor. Class designed for meteorology students in their 4th semester of university studies. Class covered a broad list of topics with emphasis in dynamics and systems at different scales of motion, from turbulence scales up to global scales. Value: 3-credit hours. Time frame: June-August 2011.
- 2011, Spring** **Introduction to Meteorology for Majors I Laboratory, School of Meteorology, University of Oklahoma, Norman, Oklahoma, USA.**
Main instructor. Class designed for meteorology students in their 3rd semester of university studies and independent from the theory section. Broad introduction to several meteorology topics via computer exercises, measurements, case studies and assignments. Topics centered on radiation, moisture, stability, soundings, GEMPAK, basic Linux, basic HTML and scientific writing. Value: 1-credit hour. Time frame: January-May 2011.
- 2010, Fall** **Meteorological Measurements Laboratory, School of Meteorology, University of Oklahoma, Norman, Oklahoma, USA.**
Laboratory instructor. Class designed for meteorology students in their 5th semester of university studies. Class focuses on instrumentation and details behind different types of measurements via hands-on activities. The course also requires the documentation of laboratory experiments via detailed laboratory reports, where the students are trained in scientific writing. Value: 3-credit hours, but the class is linked to the theory section generally taught by Petra Klein. Time frame: September-December 2010.
- 2008, Fall** **Meteorological Measurements Laboratory, School of Meteorology, University of Oklahoma, Norman, Oklahoma, USA.**
Similar to the above. Time frame: September-December 2008.
- 2007, Fall** **Meteorological Measurements Laboratory, School of Meteorology, University of Oklahoma, Norman, Oklahoma, USA.**
Similar to the above. Time frame: September-December 2007.
- 2004, Summer** **Pilot balloon and radiosonde measurements. North American Monsoon Experiment (NAMMA 2004), Mexico.**
Taught observers from six stations in north and western Mexico as part of the NAME 2004 upper air network project. Time frame: June-August 2004.

INVITED TALKS

- 2010** **"Upper Air Measurements"**. Meteorological Measurements Class METR 3613. University of Oklahoma, Norman, Oklahoma, USA. November 2010.
- 2009** **"Incorporating writing in teaching"**. Teaching Assistant Orientation. University of Oklahoma, Norman, Oklahoma, USA. August 2009.
- 2009** **"The Geography of Peru"**. Human Geography Class GEOG 1103. University of Oklahoma, Norman, Oklahoma, USA. March 2009.
- 2008** **"Upper Air Measurements"**. Meteorological Measurements Class METR 3613. University of Oklahoma, Norman, Oklahoma, USA. November 2008.
- 2007** **"Upper Air Measurements"**. Meteorological Measurements Class METR 3613. University of Oklahoma, Norman, Oklahoma, USA. November 2007.

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SKILLS

LANGUAGES

Spanish	Native.
English	Fluent. Good speaking, reading and writing.
French	Good speaking, reading and writing.
Portuguese	Good reading, speaking. Basic writing.
German	Basic reading, speaking, writing.

TRANSLATION

- English-French-English conversation/reading during the NAMMA campaign.
- Website documentation in English and Spanish.
- Optical Theodolite Manual in Spanish for Latin American Observers:
<http://www.nssl.noaa.gov/projects/pacs/salljex/archive/manuals/manual-teodolitos-v1.2.html> .

COMPUTING SKILLS

Coding	IDL, FORTRAN, MATLAB, Shell scripting.
OS	Windows, Linux, Unix.
Graphics	IDL, GrADS, GEMPAK, PHOTOSHOP, COREL, Powerpoint.
Video	Vegas Studio for video edition.
Others	MS Office, HTML, Internet.

FIELD EXPERIMENT EXPERIENCE

- **Familiar with organization and execution of meteorological field experiments.**
- **Participated in 15 campaigns:**
 - Huamantanga-Valle de Canta, Peru** (Collaboration, Jan 1997);
 - La Molina, Lima, Peru** (Self funded, May-July 1997); ;
 - San Ignacio, Bolivia** (OGP-NOAA-SALLJEX, Feb.2002);
 - Salar de Uyuni, Bolivia** (OGP-NOAA-SALLJEX, Nov.2002);
 - Lake Titicaca, Bolivia-Peru** (OGP-NOAA-SALLJEX, Jan.2003);
 - Santa Cruz, Bolivia** (OGP-NOAA-SALLJEX, Jan.2003 IOP);
 - Northwest Mexico** (OGP-NOAA-NAME, May-Aug.2004);
 - Senegal-Guinea-Mali** (OGP-NOAA-NAMMA, Jul-Aug.2006);
 - Suburban Norman, OK #1** (NSF-ILREUM, Aug-Sep.2007);
 - Urban Lima, Peru** (Self-funded; Jan-Feb. 2008);
 - Suburban Norman, OK #2** (NSF-ILREUM, May-Sep.2008);
 - Oklahoma MICRONET, Norman, OK** (Aug.2007-Feb.2010)
 - Urban Norman, OK** (NSF-ILREUM, Jun.2009 – Aug.2010);
 - FluxSAP, Nantes, France** (CNRS-ILREUM, May 2010)
 - NWC Roof, Norman, OK** (NSF-ILREUM, Sep.2010 - ongoing).
- **Familiar with different types of instrumentation:**
 - Upper air measurements:** Radiosondes, Tethersondes and Pilot Balloons.
 - Boundary-layer measurements:** Participated on the configuration and operation of RMYoung and Campbell Scientific sonic anemometers; a SCINTEC displaced beam small aperture scintillometer; temperature and relative humidity sensors; Campbell Scientific data loggers. Design and implementation of roof masts including temperature, radiation and wind sensors. Familiar with the use of solar panels and batteries to power instrumentation masts.

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LEADERSHIP SKILLS

- **Member and co-founder of SOPECIA** (Sociedad Peruana de Ciencias Atmosféricas).
- **Secretary of the Peruvian Student Association** at the University of Oklahoma (2009-10).
- **Organization of the First Peruvian Cultural Night** at the University of Oklahoma (6-November 2009). 2-hour-long show and banquet. Attendance: 300 people.

MEDIA

- Experience in **graphic design**. Proficient in Photoshop.
- Experience with **photography**.
- Experience **editing videos** and constructing **documentaries**.
- Experience designing and producing **cartoons for science education**.
- Development of teaching material via web, video, manuscripts and graphics.

MANUSCRIPTS / CONFERENCES

SIGNIFICANT MANUSCRIPTS

- Galvez, J. M., P. K. Klein and S. C. Arms, 2010:** "Scintillometer measurements of a sub-urban site in the Southern Great Plains of the United States". *To be submitted to the Boundary-Layer Meteorology Journal*. 20pp.
- Galvez, J. M., 2011:** "Integrated role of the urban canopy on turbulent transfer with the roughness sub-layer. An observational perspective." Dissertation. SoM. University of Oklahoma. Norman, OK. *To be completed by November 2011*. 200 pp.
- Galvez, J. M., 2008:** "Experimental and Numerical Studies of Turbulent Transfer in the Urban Roughness Sublayer: Observations and their Application to Improve an Urban Boundary Layer Parameterization Scheme Implemented into the WRF Model." *PhD Research Prospectus*. School of Meteorology, University of Oklahoma. Norman, OK. 75pp.
- Galvez, J. M., 2005:** "The Modulation of Rainfall by the South American Altiplano Lakes." *Masters Thesis*. School of Meteorology, University of Oklahoma. Norman, OK. 101 pp.

CONFERENCE TALKS

- Galvez, J. M., P. M. Klein, S. C. Arms and B. L. Bridges, 2010:** "Observational studies of turbulent transfer processes across the urban canopy". *Oral Presentation and Extended Abstract*. AMS Ninth Symposium on the Urban Environment. Keystone, CO, 1-6 August 2010.
- Galvez, J.M., P.M. Klein and S.C. Arms, 2009:** "Scintillometry applied to urban studies: evaluation of scintillometer measurements made at a sub-urban site". 89th AMS Annual Meeting, theme: "Urban Weather and Climate: Now and the Future". *Oral Presentation*. J3.2. Phoenix, AZ, 10-15 January, 2009.
- Galvez, J.M., P.M. Klein and S.C. Arms, 2008:** "Turbulent heat fluxes in the atmospheric surface layer: comparison of scintillometer measurements with eddy-covariance and gradient methods". *Oral Presentation*. AMS 18th Symposium on Boundary Layers and Turbulence, 10A.3. Stockholm, Sweden, 9-13 June, 2008.
- Galvez J. M. et al, 2005:** "Measuring and monitoring the mesoclimate of tropical locations: field observations from the South American altiplano during the SALLJEX." *Oral Presentation and Extended Abstract*. AMS 13th Symposium on Meteorological Observations and Instrumentation, 6.2. Savannah, GA, 20-24 June 2005.

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POSTERS AND EXTENDED ABSTRACTS

- Galvez, J. M., S.C. Arms and P.M. Klein, 2009:** "Innovative Laboratory for Research and Education in Urban Meteorology (ILREUM)". *Poster*. 2009 Unidata Users Workshop: "Using operational and experimental observations in Geoscience Education." UCAR, Boulder, CO, 8-12 June 2009.
- Galvez, J. M., R. K. Orozco, C. R. Reyes and M. W. Douglas, 2006:** "Observed diurnal circulations and rainfall over the altiplano during the SALLJEX." *Poster and Extended Abstract*. 8th International Conference on Southern Hemisphere Meteorology. Foz do Iguazu, Brazil, 2006.
- Galvez, J. M. and M. W. Douglas, 2006:** "Modulation of rainfall by Lake Titicaca using the WRF model." *Poster and Extended Abstract*. 8th International Conference on Southern Hemisphere Meteorology. Foz do Iguazu, Brazil, April 24-28 2006.
- Galvez, J.M. and M. W. Douglas:** "Northward propagating surges east of the Andes during the SALLJEX." *Poster and Extended Abstract*. 8th International Conference on Southern Hemisphere Meteorology. Foz do Iguazu, Brazil, April 24-28 2006.
- Orozco, R. K., J. F. Mejia, J. M. Galvez and M. W. Douglas, 2006:** "Plausible effects of Paleolake Tauca on the altiplano circulations and rainfall from WRF model simulations." *Poster and Extended Abstract*. 8th International Conference on Southern Hemisphere Meteorology. Foz do Iguazu, Brazil, April 24-28 2006.
- Douglas, M. W., J. F. Mejia and J. M. Galvez, J.M, 2006:** "Accuracy of the NCEP Global Tropospheric Analysis (FNL) over Central South America based upon upper air observations collected during the SALLJEX." *Extended Abstract*. 8th International Conference on Southern Hemisphere Meteorology. Foz do Iguazu, Brazil, April 24-28 2006.
- Galvez, J.M. et al., 2006:** "Diurnal variability of the cloud field over the VOCALS domain from GOES imagery." *Poster AND Extended Abstract*. 86th AMS Annual Meeting, P1.3. Atlanta, GA, 2006.
- Douglas, M.W. et al., 2006:** "The seasonal evolution of the diurnal variation of the low-level winds around the Gulf of California. Is there a link to vegetation green-up during the wet season?" *Extended Abstract*. 86th AMS Annual Meeting, P1.3. Atlanta, GA, 28 January – 3 February 2006.
- Galvez J. M. et al., 2005:** "The WRF model as a tool to understand mesoscale processes over the poorly-sampled South American Altiplano." *Poster and Extended Abstract*. AMS 11th Conference on Mesoscale Processes, P2M.4., Albuquerque, NM, 22-29 October 2005.
- Douglas, M. W., J. Murillo, J. M. Galvez, J. F. Mejia, R. Orozco and C. Brown, 2005:** "Quality control of pilot balloon data for climate monitoring." *Poster and Extended Abstract*. AMS 15th Conference on Applied Climatology/13th Symposium on Meteorological Observations and Instrumentation, JP1.30. Savannah, GA, 20-24 June 2005.
- Douglas, M. W., J. Murillo, J. F. Mejia and J. M. Galvez, 2004:** Monitoring the Variability of Atmospheric Circulations in Latin America with the Pan American Climate Studies Sounding Network. Clivar Meeting 2004. The first International CLIVAR 2004 Science Conference, June 21-25, 2004 in Baltimore, Maryland, USA.
- Douglas, M. W. and J. M. Galvez:** "A Simple Raingauge Network for the SALLJEX." *Poster*. CLIVAR PANAM Meeting. Boulder CO, September 2003.
- Douglas, M. W., J. F. Mejia, J. Murillo, and J. M. Galvez, 2003:** "LLJ structure from NOAA WP-3D measurements during the SALLJEX." *Poster*. CLIVAR PANAM Meeting. Boulder, CO, Sep. 2003.
- Douglas, M. W., J. Murillo, J. F. Mejia, and J. M. Galvez, 2003:** "New directions in the Pan American Climate Studies Sounding Network for Latin America." *Extended Abstract*. Eighth Symposium on Integrated Observing and Assimilation Systems for Atmosphere, Oceans, and Land Surface. The 84th AMS Annual Meeting (Seattle, WA), 4.4.