

Stephanie Leroux

Curriculum Vitae

34-year-old, *pacée*

french citizenship

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Education

- 2006–2009 **PhD in atmospheric sciences**, *LTHE, Université J. Fourier*, Grenoble, (PhD award 2009 from Grenoble university).
- 2006 **Master in Atmosphere-Ocean-Hydrology**, *Université J. Fourier*, Grenoble.
- 2005 **“Agrégation SVT”**, (*national competitive examination to be entitled to teach biology and Earth sciences in French high schools*).
- 2002–2004 **Undergraduate at Ecole Normale Supérieure de Lyon**, *Dpt of Earth Sciences*, (“Licence” and “Maîtrise”).
- 2000–2002 **“Classe préparatoire aux grandes écoles BCPST”**, *Lycée Malherbe*, Caen, (competitive class in maths, physics, chemistry, biology and Earth sciences to join Ecole Normale Supérieure).

Research experience

- 2015–Present **CNRS Postdoc**, *MEOM/LGGE*, Grenoble.
Intrinsic ocean variability in eddy-permitting ocean models: a probabilistic/ensemble-simulation approach (ANR OCCIPUT).
- *Analysis of intrinsic ocean variability in the OCCIPUT ensemble simulation (50× ocean/sea-ice global 1/4° hindcasts 1960-2015). Focus on ocean quantities with potential climate impact (AMOC, Heat Content, SST).*
 - *Additional ensemble simulations with a regional configuration of the ocean GCM NEMO.*
 - *Co-advisor for two masters research projects related to OCCIPUT.*
- 2013–2014 **CNRS Postdoc**, *CNRM/Météo-France*, Toulouse.
Tropical intraseasonal variability simulated in global atmospheric circulation models (European project FP7-EMBRACE).
- *Numerical experiments in “aquaplanet” configuration with the CNRM GCM.*
 - *Analysis of tropical intraseasonal variability in aquaplanets, CMIP5 and AMIP simulations.*
 - *Coordination the inter-model comparison of aquaplanet experiments with the other modeling groups in the project.*
- 2012 **Postdoc research associate**, *SUNY*, Albany, New York.
Influence of the mid-latitudes on intraseasonal variability in the west african monsoon.
- *Analysis of synoptic to intraseasonal modes of variability in the west african monsoon from reanalyses and satellite-derived precipitation/convection datasets.*
 - *Numerical experiments with an idealized global circulation model (IGCM).*
 - *Technical help to SUNY PhD students with the IGCM.*
- 2010–2011 **Postdoc research associate**, *NOAA*, Boulder, Colorado.
Analysis of the multi-scale nature of the Madden-Julian Oscillation (MJO).
- *Space-time spectral analysis of the high-frequency variability within the MJO using reanalyses data and satellite-derived precipitation/convection datasets.*

- 2006–2009 **PhD student**, *LTHE/Université Joseph Fourier*, Grenoble.
 Dynamics of the African Easterly Waves: origin, propagation and interaction with the environment. (International project AMMA on the west african monsoon)
 → 2009 thesis prize from Université J. Fourier.
 ○ *Numerical experiments with an idealized global primitive equation model (IGCM).*
 ○ *Analysis of the synoptic variability over West Africa using reanalyses data and satellite-derived precipitation/convection datasets.*

Teaching experience and communication to the public

- 2016 **Co-advisor for two master's research projects**, *MEOM, LGGE, UJF*, Grenoble.
 2006–2009 **Teaching assistant**, *UJF*, Grenoble ("monitorat").
 ~200 hours taught to undergraduate students in Earth sciences and numerical computing.
 2007–2009 **Co-advisor for undergraduate research projects**, *LTHE, UJF*, Grenoble.
 2008 & 2009 **Tribulations Savantes**, *OSUG*, Grenoble.
 Local science festival explaining to the public the research activities of the PhD students in the Earth Sciences Dpt with live experiments, photo exhibitions, films, panel discussions...
 2005 **Agrégation SVT**, *ENS*, Lyon.
 1-year training for the national competitive examination to be entitled to teach biology and Earth sciences in French high schools (diploma obtained in June 2005).

Service

- 2007–Present Reviewer for the *Journal of the Atmospheric Sciences*, *Journal of Climate*, *Quarterly Journal of the Royal Meteorological Society*, *Geophysical Research Letters*, *Theoretical and Applied Climatology*
 2014–2015 Associate Editor at *Monthly Weather Review*.
 2008–2009 In charge of the monthly ASP group seminar at *LTHE*, Grenoble.

Computing and software experience

- OS *Mac, Linux/Unix*.
 Languages Experience in: **Python, Fortran, NCL, bash scripts, \LaTeX , Matlab, Scilab**.
 Occasional use of: **C++, Ferret, HTML**.
 Models: User experience with **Global Atmospheric Circulation Models**: *ARPEGE-CNRM* (Météo-France) and *IGCM* (University of Reading, UK).
 User experience with **Global Ocean Circulation Models**: *NEMO*
<http://www.nemo-ocean.eu/>.

Languages

- French **Mother tongue**.
 English **Good writing/speaking skills** (3-year experience in the US).

Awards and grants

- 2010-2011 2-year competitive postdoc fellowship from the National Research Council (USA).
- 2009 PhD award from Université J. Fourier, Grenoble.
- 2006-2009 3-year PhD fellowship from ENS-Lyon and the French Ministry of Education.
- 2002-2005 4-year grant from Ecole Normale Supérieure de Lyon allocated to the undergraduate students who pass the competitive entrance exam.

International conferences, workshops, summer schools

- 2016 GMMC workshop, Toulon, France (oral),
- 2016 Workshop on high-resolution ocean modelling, Exeter, UK (poster),
- 2015 AGU conference , San Francisco, California (poster),
- 2014 General assembly, FP7 EMBRACE, Utrecht, Netherlands (oral),
- 2014 31th AMS conf. on Hurricanes and Tropical Meteorology, San Diego, California (oral),
- 2013 General assembly, FP7 EMBRACE, Exeter, UK (oral),
- 2012 4th AMMA conference, Toulouse, France (oral),
- 2012 30th AMS conference on Hurricanes and Tropical Meteorology, Florida (oral),
- 2011 WCRP Conference, Denver, Colorado (oral),
- 2011 AMS conf. on Atmosphere and Ocean Fluid Dynamics, Spokane, Washington (oral),
- 2010 AGU conference , San Francisco, California (poster),
- 2010 Waves and Multiscale Processes in the Tropics workshop, AIM, Palo Alto, California,
- 2010 29th AMS conference on Hurricanes and Tropical Meteorology, Tucson, Arizona (oral),
- 2009 3rd AMMA conference, Ouagadougou, Burkina Faso (oral),
- 2008 Ewim Nimdie summer school on tropical meteorology, Kumasi, Ghana (2 weeks),
- 2007 2nd AMMA conference, Karlsruhe, Germany (oral),
- 2007 EGU conference , Vienna, Austria (poster),
- 2007 ERCA (European Research Courses on Atmospheres), Grenoble, France (5 weeks).

Referees:

- Nick Hall (PhD advisor) Professor at Université Paul Sabatier, LEGOS, Toulouse.
Email: Nick.Hall@legos.obs-mip.fr. Tel: +33 5 61 33 29 19
- George Kiladis (2010-2011 Postdoc advisor) Federal research scientist, NOAA, Boulder, Colorado. Email: george.kiladis@noaa.gov. Tel: +1 303 497 3892
- Gilles Bellon (2013-2014 Postdoc advisor) Research scientist at CNRS and faculty at the university of Auckland, New-Zealand. gilles.bellon@auckland.ac.nz.
- Thierry Penduff (2015-2016 Postdoc advisor) Chargé de Recherche CNRS, LGGE, Grenoble, France. Email: thierry.penduff@univ-grenoble-alpes.fr. Tel: +33 4 56 52 86 54

Publications

- 2016 **Leroux S.**, Penduff T., Bessi res L., Brankart J.-M., Molines J.-M. , Terray L., Barnier B., (in prep.) Serazin G., J. of Climate, *How chaotic is the AMOC variability in eddy-permitting ocean models ?*
- 2016 S razin G., Jaymond A., **Leroux S.**, Penduff T., Bessi res L., Brankart J.-M., Molines J.-M. (in prep.) , Terray L., Barnier B., Serazin G., J. of Climate, *A probabilistic study of low-frequency ocean heat content variability: atmospheric influence versus oceanic chaos*
- 2016 Bessi res L., **Leroux S.**, Brankart J.-M., Molines J.-M., Bouttier P.-A., Penduff T., Terray (in rev.) L., Barnier B., Serazin G., Geosci. Model Dev. Discuss. (doi:10.5194/gmd-2016-174) *Development of a probabilistic ocean modelling system with NEMO at eddying resolution*
- 2016 **Leroux S.**, Bellon G., Roehrig R., Caian M., Klingaman N., Musat I., Rio C., Tyteca S., J. Adv. Model. Earth Syst., 8, (doi:10.1002/2016MS000683.) *Inter-model comparison of sub-seasonal tropical variability in aquaplanet experiments: effect of a warm pool.*
- 2013 Dias J., **Leroux S.**, Kiladis G., Tulusch S., GRL, **40**:1420-1425. *How systematic is organized tropical convection within the MJO?*
- 2012 Lafore, J-P, N. Asencio, D. Bouniol, F. Couvreur, C. Flammant, F. Guichard, N. Hall, S. Janicot, C. Kocha, C. Lavaysse, S. **Leroux**, E. Poan, P. Peyrille, R. Roca, R. Roehrig, F.Roux, F. Said. La M t eorologie ( dition sp ciale AMMA) **8**, 11-16. *Evolution de notre compr hension du syst me de mousson ouest-africain.*
- 2012 Liebmann, Blad , Kiladis, Carvalho, Senay, Allured, **Leroux**, Funk, J. Climate, **25**:4304–4322. *Seasonality of African Precipitation from 1996-2009.*
- 2011 **Leroux S.**, Hall N. and Kiladis G., J. Climate, **24**: 5378-5396. *Intermittent African Easterly Wave activity in a dry atmospheric model: influence of the extratropics.*
- 2011 Janicot S., Caniaux G., Chauvin F., de C tlogon G., Fontaine B., Hall N., Kiladis G., Lafore J. P., Lavaysse C., Lavender S. L., **Leroux S.** , Marteau R., Mounier F., Philippon N., Roehrig R., Sultan B., Taylor C. M. Atmosph. Sci. Lett., **12**: 58-66. *Intraseasonal variability of the West African monsoon.*
- 2010 **Leroux S.**, Hall N. and Kiladis G. QJRM, **136**, 397-410. *A climatological study of transient-mean flow interactions over West Africa.*
- 2009 **Leroux S.** and Hall N., J. Atmos. Sci., **66**, 2303-2316. *On the relationship between African easterly waves and the African easterly jet.*
- 2009 Janicot S., Mounier F., Hall N., **Leroux S.**, Sultan B., Kiladis G., J. Climate, **22**, 1541-1565. *The dynamics of the West African monsoon. Part IV: Analysis of 25-90-day variability of convection and the role of the Indian monsoon.*
- 2008 Vanvyve E., Hall N., Messenger C., **Leroux S.**, van Ypersele J.-P., Climate Dyn., **30**, 191-202. *Internal variability in a regional climate model over West Africa.*