

Dr. Joël ARNAULT

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Date of Birth: May 30th 1982 in Marseille, France

Nationality: French

EDUCATIONAL BACKGROUND

- 2006-2009 **Doctorat de troisième cycle (PhD),**
Discipline Océan/Atmosphère, Université Paul Sabatier,
Laboratoire d'Aérodynamique, Toulouse, France
PhD supervisor: Pr. Frank Roux
- 2002-2006 **“Ecole Nationale Supérieure de l’Aéronautique et de
l’Espace” (SUPAERO) – the French Engineering School of
Aeronautics and Space in Toulouse, France**
Space Imaging In-depth course
Master of Research: Signal Image Acoustique Optimisation

SCIENTIFICAL PROJECTS

- From Mar 13 **2nd Postdoc:** Role of terrestrial hydrology on precipitation at KIT
(IMK-IFU), Garmisch-Partenkirchen, Germany
- Feb 11 - Feb 13 **1st Postdoc:** Dynamical influence of gravity waves observed in
polar regions at the Swedish Institute of Space Physics (IRF),
Kiruna, Sweden
- Nov 06 - Oct 09 **PhD thesis:** Cyclogenetic evolution of West African / East
Atlantic convective disturbances at Laboratoire d'Aérodynamique,
Toulouse, France
- Apr 06 - Oct 06 **Master thesis:** Imaging of atmospheric waves and fine-scale
structures using radar interferometry at IRF, Kiruna, Sweden

EXTRACURRICULAR ACTIVITIES

Hiking, climbing, travelling, learning languages

Nov 09 / Nov 10 Walking, cycling, horse and camel riding trip between France and
Mongolia

PEER-REVIEWED PUBLICATIONS

Related to the 2nd Postdoc project

Arnault, J., R. Knoche, J. Hui, and H. Kunstmann, 2016: Evaporation tagging and atmospheric water budget analysis with WRF: A regional precipitation recycling study for West Africa, *Water Resour. Res.*, doi: 10.1002/2015WR017704.

Arnault, J., S. Wagner, T. Rummeler, B. Fersch, J. Bliefernicht, S. Andresen, and H. Kunstmann, 2016: Role of runoff-infiltration partitioning and resolved overland flow on land-atmosphere feedbacks: A case-study with the WRF-Hydro coupled modelling system for West Africa, *J. Hydrometeor.*, doi: <http://dx.doi.org/10.1175/JHM-D-15-0089.1>.

Related to the 1st Postdoc project

Réchou, A., S. Kirkwood, **J. Arnault**, and P. Dalin, 2014: Short vertical-wavelength inertia-gravity waves generated by a jet–front system at Arctic latitudes – VHF radar, radiosondes and numerical modelling, *Atmos. Chem. Phys.*, 14, 6785-6799, doi:10.5194/acp-14-6785-2014.

Arnault, J., and S. Kirkwood, 2013: Dynamical influence of a mountain wave generated by the Antarctic Peninsula: regional modelling and budget analysis, *Tellus A*, 65, 20254, doi:10.3402/tellusa.v65i0.20254.

Réchou, A., **J. Arnault**, P. Dalin, and S. Kirkwood, 2013: Case-study of stratospheric gravity waves of convective origin over Arctic Scandinavia – VHF radar observations and numerical modelling, *Ann. Geophys.*, 31, 239-250, doi:10.5194/angeo-31-239-2013.

Mihalikova, M, S. Kirkwood, **J. Arnault**, and D. Mikhaylova, 2012: Observation of a tropopause fold by MARA VHF wind-profiler radar at Wasa, Antarctica: comparison with ECMWF analysis and a WRF model simulation, *Ann. Geophys.*, 30, 1411-1421, doi:10.5194/angeo-30-1411-2012.

Arnault, J., and S. Kirkwood, 2012: Dynamical influence of gravity waves generated by the Vestfjella Mountains in Antarctica: radar observations, fine-scale modelling and kinetic energy budget analysis, *Tellus A*, 64, 17261, doi:10.3402/tellusa.v64i0.17261.

Related to the PhD project

Arnault, J., and F. Roux, 2011: Characteristics of African easterly waves associated with tropical cyclogenesis in the Cape Verde islands region in July – August – September of 2004-2008, *Atm. Res.*, 100, 61-82, doi:10.1016/j.atmosres.2010.12.02.

Jenkins, G. S., P. Kucera, E. Joseph, J. Fuentes, A. Gaye, J. Gerlach, F. Roux, N. Viltard, M. Papazzoni, A. Protat, D. Bouniol, A. Reynolds, **J. Arnault**, D. Badiane, F. Kebe, M. Camara, S. Sall, S. A. Ndiaye, and A. Deme, 2010: Coastal observations of weather features in Senegal during the African monsoon multidisciplinary analysis special observing period 3, *J. Geophys. Res.*, 115, D18108, doi:10.1029/2009JD013022.

Arnault, J., and F. Roux, 2010: Comparison between two case-studies of developing and non-developing African easterly waves: absolute vertical vorticity budget, *Mon. Wea. Rev.*, 138, 1420-1445, doi : <http://dx.doi.org/10.1175/2009MWR3120.1>.

Arnault, J., and F. Roux, 2010: Failed cyclogenetic evolution of a West-African monsoon perturbation observed during AMMA SOP-3, *J. Atmos. Sci.*, 67, 1863-1883, doi : <http://dx.doi.org/10.1175/2010JAS3203.1>.

Arnault, J., and F. Roux, 2009: Case-study of a developing African easterly wave: an energetic point of view, *J. Atmos. Sci.*, 66, 2991-3020, doi : <http://dx.doi.org/10.1175/2009JAS3009.1>.