

**Publications, communications, thèses effectuées dans le cadre de
DEPHY2 (2014-2016)**

Année 2014

Bazile, E. (2014). **GABLS4: An Intercomparison Case to Study the Stable Boundary Layer Over the Antarctic Plateau**. *Gewex_newsletter* Vol. 24 n04, November 2014, page 4

F. Cheruy, J. L. Dufresne, F. Hourdin, and A. Ducharne. **Role of clouds and land-atmosphere coupling in midlatitude continental summer warm biases and climate change amplification in CMIP5 simulations**. *Geophysical Research Letters*, 41:6493-6500, September 2014.

Couvreur, F., F. Guichard, A. Gounou, D. Bouniol, P. Peyrillé and M. Köhler, 2014 : Modelling of the Thermodynamical Diurnal Cycle in the Lower Atmosphere : **A Joint Evaluation of Four Contrasted Regimes in the Tropics Over Land**. *BOUNDARY-LAYER METEOROLOGY*, Volume: 150, Issue: 2, Pages: 185-214, Doi : 10.1007/s10546-013-9862-6. Published: FEB 2014.

Dione, C., M. Lothon, D. Badiane, B. Campistron, F. Couvreur, F. Guichard et S. M. Salla, 2013 : **Phenomenology of Sahelian convection observed in Niamey during the early monsoon**. *Quarterly Journal of the Royal Meteorological Society*, Volume: 140, Issue: 679, Pages: 500-516, Part: B, Doi:10.1002/qj.2149. Published: JAN 2014.

Rochetin N., F. Couvreur, J-Y Grandpeix, and C. Rio, 2014 : Deep Convection Triggering by Boundary Layer Thermals. **Part I: LES Analysis and Stochastic Triggering Formulation**. *Journal of the Atmospheric Sciences*, Volume: 71, Issue: 2, Pages: 496-514, Doi: 10.1175/JAS-D-12-0336.1. Published: FEB 2014.

Rochetin N., J-Y Grandpeix, C. Rio, and F. Couvreur, 2014 : Deep Convection Triggering by Boundary Layer Thermals. **Part II: Stochastic Triggering Parameterization for the LMDZ GCM**. *Journal of the Atmospheric Sciences*, Volume: 71, Issue: 2, Pages: 515-538, Doi: 10.1175/JAS-D-12-0337.1. Published: FEB 2014.

Année 2015

S. Aït-Mesbah, J. L. Dufresne, F. Cheruy, and F. Hourdin. **The role of thermal inertia in the representation of mean and diurnal range of surface temperature in semiarid and arid regions**. *Geophysical Research Letters*, 42:7572-7580, September 2015.

D. Coppin and S. Bony. **Physical mechanisms controlling the initiation of convective self-aggregation in a General Circulation Model**. *Journal of Advances in Modeling Earth Systems*, 7:2060-2078, December 2015.

F. Couvreur, R. Roehrig, C. Rio, M.-P. Lefebvre, M. Caian, T. Komori, S. Derbyshire, F. Guichard, F. Favot, F. D'Andrea, P. Bechtold, and P. Gentine. **Representation of daytime moist convection over the semi-arid Tropics by parametrizations used in climate and meteorological models**. *Quarterly Journal of the Royal Meteorological Society*, 141:2220-2236, July 2015.

Dauhut, T., J.-P. Chaboureau, J. Escobar, and P. Mascart, **Large-eddy simulation of Hector the convective making the stratosphere wetter**, *Atmos. Sci. Lett.*, 16, 135-140, 2015.

F. Hourdin, A. Gainusa-Bogdan, P. Braconnot, J.-L. Dufresne, A.-K. Traore, and C. Rio. **Air moisture control on ocean surface temperature, hidden key to the warm bias enigma**. *Geophysical Research Letters*, 42:10, December 2015.

F. Hourdin, M. Gueye, B. Diallo, J.-L. Dufresne, J. Escribano, L. Menut, B. Marticorãna, G. Siour, and F. Guichard. **Parameterization of convective transport in the boundary layer and its impact on the representation of the diurnal cycle of wind and dust emissions**. *Atmospheric Chemistry & Physics*, 15:6775-6788, June 2015.

R. Locatelli, P. Bousquet, F. Hourdin, M. Saunio, A. Cozic, F. Couvreux, J.-Y. Grandpeix, M.-P. Lefebvre, C. Rio, P. Bergamaschi, S. D. Chambers, U. Karstens, V. Kazan, S. van der Laan, H. A. J. Meijer, J. Moncrieff, M. Ramonet, H. A. Scheeren, C. Schlosser, M. Schmidt, A. Vermeulen, and A. G. Williams. **Atmospheric transport and chemistry of trace gases in LMDz5B: evaluation and implications for inverse modelling**. *Geoscientific Model Development*, 8:129-150, February 2015.

Machado, L. A. T., and J.-P. Chaboureau, **Effect of turbulence parameterization on assessment of cloud organization**, *Mon. Weather Rev.*, 143, 3246-3262, 2015

C. Muller and S. Bony. **What favors convective aggregation and why?** *Geophysical Research Letters*, 42:5626-5634, July 2015.

R. Pilon, J.-Y. Grandpeix, and P. Heinrich. **Representation of transport and scavenging of trace particles in the Emanuel moist convection scheme**. *Quarterly Journal of the Royal Meteorological Society*, 141:1244-1258, April 2015.

J.-F. Rysman, S. Verrier, A. Lahellec, and C. Genthon. **Analysis of Boundary-Layer Statistical Properties at Dome C, Antarctica**. *Boundary-Layer Meteorology*, 156:145-155, July 2015.

Verrelle, A., D. Ricard, and C. Lac, **Sensitivity of high-resolution idealized simulations of thunderstorms to horizontal resolution and turbulence parameterization**, *Quart. J. Roy. Meteor. Soc.*, 141, 433-448, 2015

Année 2016

S. Bony, B. Stevens, D. Coppin, T. Becker, K. A. Reed, A. Voigt, and B. Medeiros. **Thermodynamic control of anvil cloud amount**. *Proceedings of the National Academy of Science*, 113:8927-8932, August 2016.

Bouniol D., R. Roca, T. Fiolleau, and E. Poan, 2016 : **Macrophysical, Microphysical, and Radiative Properties of Tropical Mesoscale Convective Systems over Their Life Cycle** *Journal of Climate* May 2016, Vol. 29, No. 9

Couvreux F., E. Bazile, G. Canut, Y. Seity, M. Lothon, F. Lohou, F. Guichard, and E. Nilsson, 2016 : **Boundary-layer turbulent processes and mesoscale variability represented by numerical weather prediction models during the BLLAST campaign**. *Atmos. Chem. Phys.*, 16, 8983-9002,

doi:10.5194/acp-16-8983-2016.

Honnert R., V. Masson and F. Couvreux and D. Lancz., 2016 : **Sampling of the structure of turbulence : Implications for parametrizations at sub-kilometric scales.** *Bound.-Layer. Meteor.*, 160, 133-156, doi="10.1007/s10546-016-0130-4

F. Hourdin, Mauritsen, T., Gettelman, A., Golaz, J.-C., Balaji, V., Duan, Q., Folini, D., Ji, D., Klocke, D., Qian, Y., Rauser, F. Rio, C. Tomassini, L., Watanabe, M. and Williamson, D. 2016, **The art and science of climate model tuning**, accepted in BAMS

D. Konsta, J.-L. Dufresne, H. Chepfer, A. Idelkadi, and G. Cesana. **Use of A-train satellite observations (CALIPSO-PARASOL) to evaluate tropical cloud properties in the LMDZ5 GCM.** *Climate Dynamics*, 47:1263-1284, August 2016.

Riette S. and C.Lac, 2016 : **A New Framework to Compare Mass-Flux Schemes Within the AROME Numerical Weather Prediction Model.** *Boundary-Layer Meteorology*, 160(2), 269-297, DOI:10.1007/s10546-016-0146-9.

Tsushima, Y., M. A Ringer, T. Koshiro, H. Kawai, R. Roehrig, J. Cole, M. Watanabe, T. Yokohata, A. Bodas-Salcedo, K. D. Williams and . M. J. Webb, 2015: **Robustness, uncertainties, and emergent constraints in the radiative response of stratocumulus cloud regimes to future warming.** *Climate Dynamics*, Volume : 46, Issue : 9-10, Pages : 3025-3039, Doi:10.1007/s00382-015-2750-7. Published: MAY 2016 .

Vié, B., J.-P. Pinty, S. Berthet, and M. Leriche, LIMA (v1.0): **A quasi two-moment microphysical scheme driven by a multimodal population of cloud condensation and ice freezing nuclei,** *Geosci. Model Dev.*, 9, 567-586, 2016

F. Wang, F. Cheruy, and J.-L. Dufresne. **The improvement of soil thermodynamics and its effects on land surface meteorology in the IPSL climate model.** *Geoscientific Model Development*, 9:363-381, January 2016.

Communications:

AMA2015: 13 communications

AMA2016: 33 communications

2015 EMBRACE AG finale: 9 communications

2014 EMBRACE 3e AG: 6 communications

2014 7e conférence GEWEX sur l'énergie et le cycle de l'eau: 4 communications

Thèses:

LMD:

Jean Jouhaud : représentation des nuages dans LMDZ

Sonia Ait-Mesbah : couplage atmosphère/surface, cycle diurne Ts

Fatoumata Binta Diallo : mousson africaine, vagues de chaleur

Maxime Colin: mémoire de la convection

David Coppin : agrégation de la convection

Florentin Lemonnier: représentation de la précipitation en Antarctique dans LMDZ

LGGE:

Etienne Vignon: couche limite en Antarctique

LSCE:

Robin Locatelli : transport des traceurs

LA:

Thibaut Dauhut : convection profonde, LES haute résolution

CNRM:

Julien Léger : paramétrisation de la convection profonde

Quentin Rodier : paramétrisation de la couche limite stable

A-L Ahmat Younous : évaluation de la nouvelle physique sur CINDY-DYNAMO

Marie Taufour : évaluation de LIMA