

## CURRICULUM VITAE

### **Sandrine Bony**

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### **Education and Professional Experience**

- 1988-1990: Magistère Inter-universitaire de Physique (Paris Universities and Ecole Normale Supérieure), including a Master in Quantum Physics.
- 1991-1993: PhD, LMD and University Pierre et Marie Curie (Paris 6, France): "Analysis of the role of clouds and water vapor in the seasonal variation of the Earth Radiation Budget; Implications for climate sensitivity"
- 1994-1996: CNES (Centre National d'Etudes Spatiales) post-doctoral fellowship; Visiting scientist in the Climate and Radiation Branch of the NASA GSFC (Greenbelt, USA); Visiting scientist at the Center for Clouds, Chemistry and Climate (San Diego, USA); CNRS (National Center for Scientific Research) permanent position at LMD, Paris.
- 1999-2001: Visiting scientist at MIT (Massachusetts Institute of Technology, Cambridge, USA).
- 2010: Paris-6 Habilitation (HDR) and CNRS Senior Scientist position ("Directeur de Recherche").

### **Research Interests**

Role of clouds and water vapor in climate change, climate variability and atmospheric dynamics; Response of clouds, atmospheric circulation and precipitation to climate change; Parameterization and evaluation of clouds and convection in climate models; Use of water isotopologues to study atmospheric processes and climate.

### **Selected Professional Activities, Services and Awards**

- **World Climate Research Programme (WCRP)** : Co-Lead coordinator of the WCRP Grand Challenge on "Clouds, Circulation and Climate Sensitivity" (2012-); Co-Chair of the Working Group on Coupled Models (WGCM, 2008-); Member of the WCRP Modelling Advisory Council (WMAC, 2012-); Coordinator of the Cloud Feedback Model Intercomparison Project (CFMIP, 2006-2012)
- **Intergovernmental Panel on Climate Change (IPCC)** : Lead Author of the 4th Assessment Report; Member of the scoping meeting of the 5th Assessment Report; Contributing Author of the 3rd and 5th Assessment Reports;
- **American Meteorological Society** : Editor, Journal of Climate (2005-2008); Editor, Bulletin of the American Meteorological Society (2008-2012); Bernhard Haurwitz Memorial Lecturer Award (2012); Member of the American Meteorological Society (2006-).

- **Other international committees, panels or jury** : Member of the GFDL external review panel, Princeton, USA (2014); Member of the Scientific Advisory Board of the "High Definition Clouds and Precipitation for Climate Prediction" project HD(CP)<sup>2</sup>, Germany (2012-); Member of the Center for Multi-Scale Modeling of Atmospheric Processes (CMMAP)'s External Advisory Panel, NSF Science and Technology Center, CO, USA (2007-2008); International partner investigator of the Australian Center for Excellence on Climate Change (2011-); Jury member of the "Frontiers of Knowledge Award" of the BBVA Foundation, category Climate Change (2012-).
- **France** : Head of the LMD/IPSL climate modelling group EMC3 (Study and Modelling of Climate and Climate Change, 2012-); Member of the french scientific committee CNRS/LEFE (IDAO 2008-2011, IMAGO 2012-); Member of the IPSL scientific committee (2010-); Expert member for international cooperations, french ministry of research (Direction Générale de la Recherche et de l'Innovation du Ministère de la Recherche, 2008-2011)

## Selected Publications

Sherwood, S. C., S. Bony and J.-L. Dufresne, 2014 : Spread in model estimates of climate sensitivity traced to atmospheric convective mixing. *Nature*, 505, 37-42.

Bony S., G. Bellon, D. Klocke, S. Sherwood, S. Fermepin and S. Denvil, 2013 : Direct effect of carbon dioxide on future tropical circulation and regional rainfall. *Nature Geoscience*, 6, 447-451.

Bony S., B. Stevens, I. Held, J. Mitchell, J.-L. Dufresne, K. Emanuel, P. Friedlingstein, S. Griffies and C. Senior, 2013 : Carbon Dioxide and Climate : Perspectives on a Scientific Assessment. Monograph on Climate Science for Serving Society: Research, Modeling and Prediction Priorities, Springer, G.R. Asrar and J.W. Hurrell (eds.), pp 391-413, Springer.

Stevens, B. and S. Bony, 2013 : What are climate models missing? *Science*, 340 (6136), 1053-1054.

Stevens, B. and S. Bony, 2013 : Water in the atmosphere. *Physics Today*, June 2013, 29-34.

Bony S, C Risi and F Vimeux, 2008: Influence of convective processes on the isotopic composition ( $\delta^{18}\text{O}$  and  $\delta\text{D}$ ) of precipitation and water vapor in the tropics: Part 1. Radiative-convective equilibrium and TOGA-COARE simulations. *J. Geophys. Res.*, 113, D19305, doi:10.1029/2008JD009942.

Bony S, R Colman, V M Kattsov, R P Allan, C S Bretherton, J-L Dufresne, A Hall, S Hallegatte, M M Holland, W Ingram, D A Randall, B J Soden, G Tselioudis and M J Webb, 2006: How well do we understand and evaluate climate change feedback processes ? (Review Article), *J. Climate*, 19 (15), 3445-3482.

Bony S and J-L Dufresne, 2005: Marine boundary layer clouds at the heart of tropical cloud feedback uncertainties in climate models, *Geophys. Res. Lett.*, 32, No. 20, L20806, doi:10.1029/2005GL023851.

Bony S and K A Emanuel, 2005: On the role of moist processes in tropical intraseasonal variability: cloud-radiation and moisture-convection feedbacks. *J. Atmos. Sci.*, 62 (8), 2770-2789. Bony S, J-L Dufresne, H Le Treut, J-J Morcrette and C Senior, 2004: On dynamic and thermodynamic components of cloud changes. *Climate Dynamics*, 22, 71-86.