

born January 14th, 1986
French citizen

Education

PhD Environmental sciences	Univ. Versailles St Quentin Yvelines (FR)	2013
<i>thesis</i>	Modélisation de la culture de la canne à sucre avec un modèle d'agroécosystème terrestre: paramétrisation et propagation de l'incertitude	
MS in Atmospheric sciences	Univ. of California, Davis (USA)	2007-2009
<i>thesis</i>	Evaluation of the simulation of the 2006 California heat wave by WRF using satellite and ground-based observations	
Engineering degree Fluid mechanics	INP-ENSEEIH, Toulouse (FR)	2005-2009

Research experience

'Modelling tree response to aridity increase with traits' - <i>Collab:</i> J.Peñuelas, H. Cornelissen	
<i>Funding</i>	(Post-doctoral funding) Marie Skłodowska-Curie Action
<i>Host</i>	CREAF (Centre de Recerca Ecologica i Aplicacions Forestals), Barcelona (ES)
<i>Visit</i>	VU University, Amsterdam (NL)
	Quantify main determinants of short-term tree response to drought Introduce trait modelling in a Land Surface Model (ORCHIDEE) Simulate the physiological response of forests to more frequent droughts in the future
	2013-2017
'Carbon budget of the French forest' - <i>PI:</i> S.Luyssaert	
<i>Funding</i>	(Post-doctoral funding) ADEME REACCTIF National
<i>Host</i>	IPSL (Institut Pierre Simon Laplace), Paris (FR)
<i>Visit</i>	VU University, Amsterdam (NL)
	Elaborate scenarios of forest management and wood use in collaboration with stakeholders Develop an empirical model of forest resources based on forest inventory data Model life cycle of wood carbon emissions from forest growth to products end-of-life Contribute to mechanistic model development for managed forests (ORCHIDEE-Can)
	spring 2016
'Modelling sugarcane growth for biofuel production' - <i>Advisor:</i> P. Ciais	2010-2013
<i>Funding</i>	CEA PhD Research Training Funding
<i>Host</i>	LSCE (Laboratoire des Sciences du Climat et de l'Environnement), Saclay (FR)
	Model parameterization: STICS (mechanistic agronomical model) for sugar cane Sensitivity/Uncertainty analyses ORCHIDEE-STICS On-site and regional ensemble runs of sugarcane growth for ethanol production application.
'Characteristics of California heat waves' - <i>Advisor:</i> R. Grotjahn	2008-2009
<i>Funding</i>	UC Davis reasearch assistantship
<i>Host</i>	UC Davis (Atmospheric Sciences Dept.), Davis (USA)
	Statistical analysis of station (surface temperatures, winds) & remote sensing (MODIS) data Regional simulations of the 2006 heatwave in California (WRF model) Simulation of soil moisture with assimilation tool called LIS.

Awards & fellowships

Marie Skłodowska Curie Individual fellowship - Supervisor: J. Peñuelas, H. Cornelissen.	
France Berkeley Funds fellowship - Mentors: R. Grotjahn, S. Ustin, F. D'Andrea	2018-2020
Calibration and mapping of satellite skin temperatures by surface station data with evaluation of WRF guidance	2009-2010
NASA Graduate Student Summer Program 2009 - Mentor: J. Santanello	
'Modelling the relationship between soil humidity and heat waves' - NASA Goddard Space Flight Center	06-08/2009

Computer skills

Operating systems	Programming	Statistical analysis	Data visualization	Text processing
OS X	Shell, NC, CDO	Python	Ferret	Microsoft Office
Linux	Fortran	R	NCL	LibreOffice
Microsoft windows	Matlab		GrADS	Latex

Languages

French	Native speaker	Spanish	Intermediary (~ B1 CEF)
English	Fluent (2years USA)	Italian	Beginner (~ A2 CEF)

Student supervision

Internship supervision : 1st year graduate student in Ecology, Biodiversity and Evolution Validation of an empirical model of forest growth, 10 weeks (I. Jesus Van der Kellen)	04-06/2016
Support classes : High school physics & chemistry (CEA program CAMS) 3 years - 1 weekly session ~4 students	2011-2013
Teaching assistantship : Undergraduate 'Extreme meteorological events' (UCDavis ATM101) 1 quarter, 2 weekly sessions ~30 students	2009

Journal review

Reviewer for peer-review journals :
Forests, Climatic Changes, Geoscientific Model Development, Forest Policy and Economics

General public communications & outreach activities

- 01/2016- now, Construction of an educational board game on cities' vulnerability to climate change.
- 2/15/2016, France Inter (interview, national radio), La tête au carré, "A la UNE de la science: les forêts qui réchauffent le climat."
- 4/2/2016, Le Monde (interview, national press), "Les forêts d'Europe ne tempèrent pas le réchauffement climatique."
- 2/12/2015, COP21 side-event. Les entreprises du monde agricole, agroalimentaire et forestier et leurs partenaires se mobilisent face au changement climatique, Le Bourget, France. "Carbone et mobilisation de la ressource forestière". A. Valade, Luysaert S., Bellassen V., Vallet P. Oral. Invited
- 10/10/2015, Fête de la Science, Université Pierre et Marie Curie, Paris, France
Scientific experiments to explain to kids and adults the bases of physical Earth science.

Peer-reviewed publications

Valade A., V. Bellassen, S. Luyssaert, Largest uncertainties in the forest carbon balance, (2016) submitted to **Biogeosciences**

Erb K-H., S. Luyssaert, P. Meyfroidt, J. Pongratz, A. Don, S. Kloster, T. Kuemmerle, T. Fetzel, R. Fuchs, M. Herold, H. Haberl, C.D. Jones, E. Marín Spiotta, I. McCallum, E. Robertson, V. Seufert, S. Fritz, **A. Valade**, A. Wiltshire, A.J. Dolman (2016). Land management: data availability and process understanding for global change studies. **Global Change Biol.** doi:10.1111/gcb.13443

Naudts, K., Y. Chen, M. J. McGrath, J. Ryder, **A. Valade**, et al. (2016). Europe's forest management did not mitigate climate warming. **Science**, DOI: 10.1126/science.aad7270, [14 citations](#).

McGrath, M. J., Luyssaert, S., Meyfroidt, P., Kaplan, J. O., Buergi, M., Chen, Y., K. Erb, U. Gimmi, D. McInerney, K. Naudts, J. Otto, F. Pasztor, J. Ryder, M.-J. Schelhaas, and **A. Valade** (2015). Reconstructing European forest management from 1600 to 2010. **Biogeosciences**, DOI:10.5194/bg-12-4291-2015, [11 citations](#).

Chen, Y., J. Ryder, V. Bastrikov, M. J. McGrath, K. Naudts, J. Otto, C. Otlé, P. Peylin, J. Polcher, **A. Valade**, et al. (2016). Evaluating the performance of the land surface model ORCHIDEE-CAN on water and energy flux estimation with a single- and a multi-layer energy budget scheme, **Geosc. Mod. Dev.**, DOI:10.5194/gmd-2016-26.

Ryder J., J. Polcher, P. Peylin, C. Otlé, Y. Chen, E. van Gorsel, V. Haverd, M. J. McGrath, K. Naudts, J. Otto, **A. Valade**, and S. Luyssaert (2014). A multi-layer land surface energy budget model for implicit coupling with global atmospheric simulations, **Geosc. Mod. Dev.**, DOI:10.5194/gmd-9-223-2016, [3 citations](#).

K. Naudts, J. Ryder, M. J. McGrath, J. Otto, Y. Chen, **A. Valade**, et al. (2015). A vertically discretised canopy description for ORCHIDEE (SVN r2290) and the modifications to the energy, water and carbon fluxes, **Geosc. Mod. Dev.**, DOI:10.5194/gmd-8-2035-2015, [3 citations](#).

Valade A., N. Vuichard, P. Ciais, F. Ruget, N. Viovy, B. Gabrielle, N. Huth, J.-F. Martiné (2014). Modeling sugarcane yield with a process-based model from site to continental scale: uncertainties arising from model structure and parameter values, **Geosc. Mod. Dev.**, DOI:10.5194/gmd-7-1225-2014, [2 citations](#).

Valade A., P. Ciais, N. Vuichard, N. Viovy, A. Caubel, N. Huth, F. Marin, J.-F. Martiné (2013). ORCHIDEE-STICS, a process-based model of sugarcane biomass production: calibration of model parameters governing phenology, **Global Change Biol. Bioen.**, DOI: 10.1111/gcbb.12074, [6 citations](#).

Other publications

Valade A. "Actualités scientifiques" in Bilan Carbone de la filière forêt-bois: comment l'évaluer et qu'est-ce qui l'influence?, Dossier n°12 club carbone-forêt-bois, I4CE, 16/06/16, 8-16.

Valade A. "Actualités scientifiques" in Atténuation et adaptation pour le secteur forêt-bois: quelles interactions sur le plan local? Comment favoriser les synergies?, Dossier n°11 club carbone-forêt-bois, I4CE, 16/11/15, 7-14.

Valade A. "Actualités scientifiques" in Compensation carbone ou mécénat? Quelles stratégies pour les entreprises, quelles conséquences pour les porteurs de projet, Dossier n°10 club carbone-forêt-bois, cdc climat, 22/06/15, 7-14.

Valade A. "Actualités scientifiques" in Les controverses autour du développement du bois-énergie, Dossier n°9 club carbone-forêt-bois, cdc climat, 17/11/14, 7-13.

Valade A. "Actualités scientifiques" in Quelle certification pour les projets de compensation carbone en forêt française, Dossier n°8 club carbone-forêt-bois, cdc climat, 20/06/14, 7-14.

Academic presentations

22/06/2016, Forests Bioenergy and the global climate KSLA conference, Stockholm, Sweden. Potential of forest management for future climate mitigation. **Valade A.**, V. Bellassen, K. Naudts, J. Otto, J. Ryder, M. McGrath, Y. Chen, P. Vallet, S. Luysaert, Oral, invited.

12/05/2016, French committee of International Union for Conservation of Nature. Forest management and climate. **Valade A.**, Oral, invited.

30/03/2016, Séminaire 'la biéconomie au service de la transition énergétique', Paris, France. Bilan Carbone de la forêt française. **Valade A.**, S. Luysaert, V. Bellassen, P. Vallet, Oral, invited.

29/03/2016, Joint seminar REACCTIF and BGF, Paris, France. Bilan Carbone de la forêt française. **Valade A.**, Luysaert S., Bellassen V., Vallet P., Martin M., Njakou Djomo S. Oral, invited.

16/12/2015, AGU, San Francisco, USA. Potential of forest management to reduce French carbon emissions - regional modeling of the French forest carbon balance from the forest to the wood. **Valade A.**, S. Luysaert, V. Bellassen, and P. Vallet. Oral.

16/04/2015, EGU, Vienna, Austria. To cut or not to cut, impact of forest management on the French forest resource. **Valade A.**, S. Luysaert, V. Bellassen, P. Vallet, and M. Martin. Poster.

13/02/2015. Laboratoire d'Economie Forestière, Nancy, France. Modeling forest management strategies for reducing carbon emissions. **Valade A.**, Luysaert S., Bellassen V., Vallet P., Martin M. Oral, invited.

12/2012 American Geophysical Union, San Francisco, USA. How (un)certain are sugarcane biomass simulations? **Valade A.**, Vuichard N., Viovy N., Ciais P., Rugef F., Gabrielle B. Poster.