

# Amandine GERMON

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**POSTDOCTORAL RESEARCH ASSOCIATE** [CABBI](#) (Oct 19- Today)  
**ILLINOIS** **University of Illinois at Urbana-Champaign**  
Supervised by [Andrew Leakey](#) & [Wendy Yang](#)

The goal is to understand how the **root system** interacts with shoots and microbes to influence water use efficiency and nitrogen cycling in model C4 species.

## EDUCATION AND QUALIFICATIONS

2015-2019

**PhD in Functional Ecology**



**Joint São Paulo State University UNESP – Brazil and SupAgro Montpellier School – France** *Doctoral School GAIA*

2013 - 2014



**Last year of Engineering University at AgroParisTech - Ex ENGREF – FRANCE**

*Dominant Deepening in Environmental management of Tropical ecosystems and Forests*  
Institute awarding a 5-year degree equivalent to a Master of Science

**& Master STVE specialization "Management of Tropical Ecosystems"**

*Obtention of the double diplôme October 2014*

**Agricultural Engineer & Master's Degree**

2010 – 2012



**2 Years at a French Engineering University of Agronomics and Food Industries – ENSAIA - FRANCE**

Institute awarding a 5-year degree equivalent to a Master of Science

**Pre-Specialization: Science and Environmental Engineering**

2007 – 2010

**Lycée (Post High-school) Jean Baptiste Say – Paris**

Preparatory classes for University entrance examinations

"Prépa BCPST" - Biology, Chemistry, Physics and Earth Sciences

2007

**4 'A' Levels in scientific subject obtained with Honors** in the French High-school in Santo Domingo – Dominican Republic.

## EMPLOYMENT AND INTERSHIPS

2015-2019



**PhD in Functional Ecology UMR Eco&Sols - Functional Ecology and Soil**

**Biogeochemistry** – Supervised by [Jean-Paul Laclau](#) & [Christophe Jourdan](#)

**São Paulo Research Foundation scholarship (FAPESP)**

Consequences of clear-cutting on the production of fine roots, CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O down to the water table in coppice-managed *Eucalyptus grandis* stands in a throughfall-exclusion experiment.

2014

[6 months]



**End-of-studies internship on a research project of UMR System - Tropical and Mediterranean Cropping System Functioning and Management**

Montpellier – **France** Tutor: [Christian Dupraz](#)

Root Dynamics in Agroforestry systems and impact on the carbon cycle

2013

[4 months]



**Gap-year internship on a research project of IRD, CNRS/CEFE and UFLA**

Lavras – **Brazil**- Tutor: [Joao Paulo R. A. Delfino Barbosa](#)

Impacts of global changes in the fire regime, functioning and structure of tropical landscapes

2012 – 2013

[7 months]



**Gap-year internship with the Agricultural Research for Development**

**CIRAD, CATIE Turrialba – Costa Rica**- Tutor: [Jacques Avelino](#)

Phytopathologic observations and analysis for the study of ecosystem services from cocoa agroecosystem

2011

[6 weeks]



**BANAMART –Martinique** Martinique's banana agricultural group – Internship

Field & Conditioning area work

## LANGUAGES SKILLS

- French: Mother tongue
- Spanish: Bilingual  
(6 years in Dominican Republic)
- English: Good level both written and oral  
(1.5 years in the United States)
- Portuguese: Fluent (3 years in Brazil)

## COMPUTING SKILLS

- R, RStudio
- Root Typ, Dig R
- Hydrus
- Min3P
- Hi-sAFé
- WinRhizotron
- WinRhizo
- Image J, XnView
- Pack Office
- Macintosh & PC

## MY ASSETS

- Adaptability
- Autonomy
- Determination
- Efficiency
- Reliability
- Organization
- Teamwork

## SKILLS

- Management of a scientist multidisciplinary project
- Ability to work with different research teams
- Ability to conduct field and greenhouse sampling work
- Statistical processing and analyses
- Team managing technicians and interns

## PROJECT AND COLLABORATIONS

**Project:** CABBI Center for Advanced Bioenergy and Bioproducts Innovation

**Contributors:** Andrew Leakey (University of Illinois at Urbana-Champaign), Wendy Yang (University of Illinois at Urbana-Champaign), Niteen N. Kadam (University of Illinois at Urbana-Champaign), Alistair P. Leverett (University of Illinois at Urbana-Champaign)

**Project:** Impact of water regime on root and gaseous profiles of deep tropical soil under eucalyptus conducted in coppice (ProfiSol)

**Contributors:** Jean-Paul Laclau (CIRAD, UMR Eco&Sols), Lydie Chapuis-Lardy (IRD, UMR Eco&Sols), Christophe Jourdan (CIRAD, UMR Eco&Sols), Tiphaine Chevallier (IRD, UMR Eco&Sols), Yann Nouvellon (CIRAD, UMR Eco&Sols), Agnes Robin (CIRAD, UMR Eco&Sols), Ciro Antonio Rosolem (UNESP), Jose Leonardo Gonçalves (ESALQ, USP), Irae Amaral Guerrini (UNESP)

**Project:** EUCFLUX « Quantification of the Carbon, Water and Nutrient Balances, in the Ecosystem Scale, for a Rotation of the *Eucalyptus* using Flux tower »

**Contributors:** Christophe Jourdan (CIRAD, UMR Eco&Sols), Yann Nouvellon (CIRAD, UMR Eco&Sols), Agnes Robin (CIRAD, UMR Eco&Sols), Gueric Le Maire (CIRAD, UMR Eco&Sols), Jean-Paul Laclau (CIRAD, UMR Eco&Sols)

**Project:** Agripsol « Agroforestry for soil protection », ANR ECOSFIX « Roots ecosystem services - water redistribution, carbon sequestration and soil fixation », ANR-2010-STRA-003-01.

**Contributors:** Rémi Cardinael (CIRAD, UPR AIDA), Christophe Jourdan (CIRAD, UMR Eco&Sols), Christian Dupraz (INRA, UMR System), Alexia Stokes (INRA, UMR AMAP), Ivan Preto (CNRS. CEF, Montpellier), Zhun Mao (IRSTEA, Grenoble), John Kim (Max Planck Institute for Biogeochemistry)

**Project** « Effect of the pod production dynamic of the cocoa tree and inoculum sources on the Frosty Pod Rot (*Moniliophthora roreri*) development »

**Contributors:** Leandro-Muñoz Mariela (CATIE), Jacques Avelino (CIRAD, UPR Bioagresseurs)

### TECHNICAL SKILLS

- Electron capture gas chromatography (CPG-ECD)
- LI-8100 Soil respiration chamber (LiCor Inc., Lincoln, NE, USA)
- LI-6800 Portable Photosynthesis System equipped with the Multiphase Flash Fluorometer and Chamber (LI-COR Inc., Lincoln, NE, USA)
- Circular scanner system (CI-600 Root Growth Monitoring System, CID, USA)
- Exchangeable ammonium, nitrate and nitrite by extraction-distillation methods
- Nanofocus  $\mu$ surf explorer optical topometers (Nanofocus, Oberhausen, Germany)
- Neomycin phosphotransferase II ELISA analyses

### REVIEWING

- Soil Biology and Biochemistry
- Plant-Environment Interactions
- Land Degradation & Development
- Journal of Plant Nutrition and Soil Science
- Archives of Agronomy and Soil Science
- Forest Ecology and Management
- Plant and Soil

### LONG STAY

- Martinique (French West Indies) 11 years
- Dominican Republic 6 years
- Brazil 3 years
- USA 1.5 years
- Costa Rica 7 months
- Spanish-speaking South America 3 months
- Central America 2 months
- French Guyana 1 month

### CAPACITIES AND SPORTS

- Clean driving license
- Swimming (Sports study program and competitions)
- Kite surf, Diving, Hiking
- Bridge - 7th at French Junior championship

### OTHER INTERESTS AND ACTIVITIES

Member of the organization team of:

- **EUCALYPTUS 2018** Managing Eucalyptus plantations under global changes, 17-21 September 2018, Montpellier, France
- **Climat-Smart Agriculture 2015**: Global Science Conference. 16-18 March 2015, Montpellier, France
- **24h de Stan 2012** -Nancy, France (40 000 persons, budget 78 000€)
- **Inter-Agros 2011** -Nancy, France (2 000 students, budget 200 000€)

## SCIENTIFIC COMMUNICATIONS

Number of publications in international peer-reviewed journals: **8 (4 as first author)**

### Published review paper:

**Germon, A.**, Laclau, J-P., Robin, A., Jourdan, C. (2020) Tamm Review: Deep fine roots in forest ecosystems: Why dig deeper? **Forest Ecology and Management**, 466, 118-135. <https://doi.org/10.1016/j.foreco.2020.118135>

### Published scientific articles:

Bordron, B., **Germon, A.**, Laclau, J.P., Oliveira, I.R., Robin, A., Jourdan, C., Paula, R.R., Pinheiro, R.C., Guillemot, J., Gonçalves, J.L.M. and Bouillet, J.P. (2021). Nutrient supply modulates species interactions belowground: dynamics and traits of fine roots in mixed plantations of *Eucalyptus* and *Acacia mangium*. **Plant and Soil**, pp.1-19. <https://doi.org/10.1007/s11104-020-04755-2>

**Germon, A.**, Jourdan, C., Bordron, B., Robin, A., Nouvellon, Y., Chapuis-Lardy, L., Gonçalves, JLM., Pradier, C., Guerrini, IA., Laclau, J-P. (2019). Consequences of clear-cutting and drought on fine root dynamics down to 17 m in coppice-managed eucalypt plantations. **Forest Ecology and Management**, 445, 48-59. <https://doi.org/10.1016/j.foreco.2019.05.010>

Robin, A., Pradier, C., Sanguin, H., Mahé, F., Lambais, G.R., Prudêncio de Araujo Pereira, A., **Germon, A.**, Cintra, M., Tisseyre, P., Pablo, A.L., Heuillard, P., Saudavet, M., Bouillet, J.P., Dini Androte, F., Plassard, C., Jurandy Bran Nogueira Cardoso, E., Laclau, J.P., Hinsinger, P., Jourdan, C. (2019) How deep can ectomycorrhizas go? A case study on *Pisolithus* down to 4 meters in a Brazilian eucalypt plantation. **Mycorrhiza**, 29, 637-648 <https://doi.org/10.1007/s00572-019-00917-y>

**Germon, A.**, Guerrini, I. A., Bordron, B., Bouillet, J. P., Nouvellon, Y., de Moraes Gonçalves, J. L., Jourdan, C. Laclau, J. P. (2018). Consequences of mixing *Acacia mangium* and *Eucalyptus grandis* trees on soil exploration by fine-roots down to a depth of 17 m. **Plant and Soil**, 424 (1-2), 203-220. <https://doi.org/10.1007/s11104-017-3428-1>

Lambais, G. R., Jourdan, C., de Cássia Piccolo, M., **Germon, A.**, Pinheiro, R. C., Nouvellon, Y., Stape, J.L., Camargo, O., Le Maire, G., Laclau, J.P. (2017). Contrasting phenology of *Eucalyptus grandis* fine roots in upper and very deep soil layers in Brazil. **Plant and Soil**, 421(1-2), 301-318. <http://dx.doi.org/10.1007/s11104-017-3460-1>

Leandro-Muñoz, M. E., Tixier, P., **Germon, A.**, Rakotobe, V., Phillips-Mora, W., Maximova, S., Avelino, J. (2017). Effects of microclimatic variables on the symptoms and signs onset of *Moniliophthora roreri*, causal agent of Moniliophthora pod rot in cacao. **PloS one**, 12(10), e0184638. <http://dx.doi.org/10.1371/journal.pone.0184638>

**Germon, A.**, Cardinael, R., Prieto, I., Mao, Z., Kim, J., Stokes, A., Dupraz, C., Laclau, J.P., Jourdan, C. (2016). Unexpected phenology and lifespan of shallow and deep fine roots of walnut trees grown in a silvoarable Mediterranean agroforestry system. **Plant and soil**, 401(1-2), 409-426. <http://dx.doi.org/10.1007/s11104-015-2753-5>

### Published abstract:

**Germon, A.** Conséquences de la coupe rase sur la production de racines fines, CO<sub>2</sub>, CH<sub>4</sub> et N<sub>2</sub>O jusqu'à la nappe phréatique dans une plantation d'*Eucalyptus grandis* menée en taillis sur un dispositif d'exclusion de pluie. **Bois et Forêts des Tropiques** – ISSN : L-0006-579X, v 346, 2021 – p. 79-80

### Scientific articles under review:

Guillemot, J., Asensio, V., Bordron, B., Le Maire, G., Nouvellon, Y., Abreu-Junior, C., Battie-Laclau, P., Bouillet, J-P, Domec, J-C., **Germon, A.**, Martin-StPaul, N., Gonçalves, JLM., Robin, A., Delgado-Rojas, JS., Laclau, J-P. Potassium supply increases hydraulic constraints on water use in Eucalyptus trees. **Under review Plant Cell & Environment**.

### Scientific articles in prep.:

**Germon, A.**, Chapuis-Lardy, L., Nouvellon, Y., Jourdan, C., Robin, A., Guillemot, J., Rosolem, CA., Gonçalves, JLM., Guerrini, IA., Laclau, J-P. Consequences of clear-cutting and drought on CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O productions throughout deep soil profiles in coppice-managed eucalypt plantations. **In prep.**

Gomide, M.P., **Germon, A.**, Laclau, J-P, Rodrigues, T.M., Jourdan, C. Anatomy of deep and superficial roots of *Eucalyptus grandis* trees under rainfall reduction. **In prep.**

## Oral Communication:

**Germon, A.,** Jourdan, C., Chapuis-Lardy, L., Nouvellon, Y., Robin, A., Rosolem, C.A., Gonçalves, J.L.M., Guerrini, I.A., Laclau, J-P. Dynamics of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O concentrations throughout deep soil profiles in Eucalypt plantations subjected to contrasted rainfall regimes: consequences on soil effluxes. **EUCALYPTUS 2018** Managing Eucalyptus plantations under global changes, 17-21 September 2018, Montpellier, France

Jourdan, C., **Germon, A.,** Pradier, C., Gomide, M., Guerrini, I.A., Rodrigues, T., Lambais, G.R., Robin, A., Gonçalves, J.L.M., Hinsinger, P., Laclau, J.P. Unexpected root growth and functioning in very deep rooted eucalyptus tree plantations: ontogeny or adaptation to abiotic stresses? **EUCALYPTUS 2018** Managing Eucalyptus plantations under global changes, 17-21 September 2018, Montpellier, France

Laclau, J.P., **Germon, A.,** Pinheiro, R., Lambais, G.R., Bordron, B., Christina, M., Bouillet, J.P., Nouvellon, Y., Gonçalves, J.L.M., Robin, A., Guillemot, J., Le Maire, G., Jourdan, C. Very deep rooting in tropical eucalypt plantations: consequences for management under climate changes. **EUCALYPTUS 2018** Managing Eucalyptus plantations under global changes, 17-21 September 2018, Montpellier, France

Robin, A., Pradier, C., Sanguin, H., Mahé, F., Lambais, G.R., Prudêncio de Araujo Pereira, A., **Germon, A.,** Cintra, M., Tisseyre, P., Pablo, A.L., Heuillard, P., Saudavet, M., Bouillet, J.P., Dini Androte, F., Plassard, C., Jurandy Bran Nogueira Cardoso, E., Laclau, J.P., Hinsinger, P., Jourdan, C. How deep can ectomycorrhizas go? A case study on *Pisolithus* down to 4 meters in a Brazilian eucalypt plantation. **EUCALYPTUS 2018** Managing Eucalyptus plantations under global changes, 17-21 September 2018, Montpellier, France

**Germon, A.,** Jourdan, C., Bordron B., Robin, A., Guerrini, I.A., Gonçalves, J.L.M., Laclau, J-P. Consequences of clear-cutting and drought on fine root production and mortality down to 17 m in Brazilian eucalypt plantations, **ISRR10** International Society of Root Research conference, 8-12 July 2018, Yearim Hotel, Israel

Jourdan, C., **Germon, A.,** Pradier, C., Gomide, M., Rodrigues, T., Lambais, G.R., Cardinael, R., Defrenet, E., Rounsard, O., Robin, A., Hinsinger, P., Laclau, J.P. Unexpected Root Growth and Functioning in Very Deep Rooted Temperate and Tropical Tree Plantations: Ontogeny or Adaptation to Abiotic Stresses? **ISRR10** International Society of Root Research conference, 8-12 July 2018, Yearim Hotel, Israel

**Germon A.,** Ferreira D.S., Guerrini I.A., Bouillet J.P., Nouvellon Y., Gonçalves J.L.M., Moreira R.M., Jourdan C., Laclau J.P. Consequences of mixing *Acacia mangium* and *Eucalyptus grandis* trees on soil exploration by fine roots down to a depth of 17 m in a tropical planted forest, **EcoSummit 2016** - Ecological Sustainability: Engineering Change, 29 August - 1 September 2016, Le Corum, Montpellier, France (Lightning talk and poster)

Chenu, C., Cardinael, R., Chevallier, T., **Germon A.,** Jourdan, C., Dupraz, C., Barthès, B., Bernoux, M. The contribution of agroforestry systems to climate change mitigation – Assessment of C storage in soils in a Mediterranean context. **Our Common Future under Climate Change 2015**, 7-10 July 2015, Paris, France.

Cardinael, C., Chevallier, T., **Germon A.,** Jourdan, C., Dupraz, C., Barthès, B., Bernoux, M., Chenu, C. Agroforestry for a climate-smart agriculture – a case study in France. **Climate-Smart Agriculture 2015** : Global Science Conference. 16-18 March 2015, Montpellier, France.

Cardinael, C., Chevallier, T., Jourdan, C., **Germon A.,** Dupraz, C., Chenu, C. Linking rooting depth and fine root turnover to soil organic carbon stocks in a Mediterranean agroforestry system. **ISRR9**: International Society of Root Research, International Symposium 6-9 October 2015, Canberra, Australia.

## Poster Communication:

**Germon, A.,** Jourdan, C., Bordron, B., Robin, A., Gonçalves, J.L.M., Chapuis-Lardy, L., Guerrini, I.A., Laclau, J.P. Unexpectedly, clearcutting does not increase fine root mortality down to 17 m deep in eucalypt plantations conducted in coppice in a Brazilian throughfall exclusion experiment. **EUCALYPTUS 2018** Managing Eucalyptus plantations under global changes, 17-21 September 2018, Montpellier, France

Bordron, B., Asensio, V., Christina, M., Abreu-Junior, C.H., **Germon, A.,** Bouillet, J-P., Gonçalves, J.L.M., Laclau, J-P. Consequences of potassium deficiency and throughfall exclusion on fine root distributions down to 17 m depth in Brazilian *Eucalyptus grandis* plantations. **EUCALYPTUS 2018** Managing Eucalyptus plantations under global changes, 17-21 September 2018, Montpellier, France

**Germon A.,** Jourdan, C., Chapuis-Lardy, L., Nouvellon, Y., Robin, A., Rosolem, C.A., Gonçalves, J.L.M., Guerrini, I.A., Laclau, J.P. Consequence of clear-cutting and drought on deep soil CO<sub>2</sub> and N<sub>2</sub>O profile concentrations and surface fluxes in Brazilian eucalypt plantations. **IUFRO 2017** Interconnecting Forests, Science and People, 19-22 september 2017, Freiburg, Germany

**Germon A.,** Cardinael, C., Dupraz, C., Laclau, J.P., Jourdan, C., Fine root lifespan depending on their diameter and soil depth. **ISRR9**: International Society of Root Research, International Symposium 6-9 October 2015, Canberra, Australia.