

Gabriel Hmimina

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Skills :

- Vegetal physiology** Fluorescence analysis (PAM2000, PAM2500, Waltz), gas exchange measurements (LI-6400XT, LI-COR), leaf biochemistry (pigment extraction, spectrophotometry), proximal spectrophotometry (LI-1800, LI-COR)
- Vegetal ecophysiology** Data logging (Campbell Scientific), Gas exchange analysis, time series analysis, ecophysiological modeling (CASTANEA, ESE, Orsay)
- Remote sensing** Design of optical sensors, spectrophotometry (Ocean optics, ASEQ, ASD), light sampling, MODIS images processing and analysis
- Technical skills** Electronic (optoelectronic, analogic signals amplification, filtering, processing), scientific computing (Matlab, Fortran, C++, CUDA), low level programming (VBasic, C, C++, arduino, RS232/USB interfacing).

Education and professional appointment :

- 05/2016 – 05/2017 :** Post-doctorant, CALMIT, UNL, Lincoln Nebraska, USA :
«*Evaluating growing season length and productivity across the ABoVE Domain using novel satellite indices and a ground sensor network*»
- 02/2014 – 05/2016 :** Post-doctorant, Vegetal ecophysiology team, ESE laboratory, University Paris-XI (France) :
«*Development of an UAV based optical sensor for the monitoring of cyanobacteria populations in continental aquatic ecosystems*»
- 12/2009 – 11/2013 :** PhD, Vegetal ecophysiology team, ESE laboratory, University Paris-XI (France) :
«*Potential of proximal teledetection and modeling as a way to assess canopy structure and functioning*»

- 2009 :** MSc AIV (Interdisciplinary Approaches in Life Sciences). Internships: three internships, 3 months each. Atmospheric pollen flux modeling: Agroparistech, Paris (France). EGC laboratory, INRA Grignon (France), ESE laboratory, University Paris-XI.
- 2005-2008 :** Agroparistech, Graduate Institutes in Science and Engineering. Two internship of 6 months :
- IFP, Pondicherry (India): calibration of a canopy gap fraction model in the Indian Western Ghats.
 - Sylvolab, CIRAD, IRD, Kourou (French Guyana): study of the link between foliar traits phenotypic plasticity and light environment.

Publications

Soudani K, Hmimina G, Delpierre N, Pontailier JY, Aubinet M, Bonal D, Caquet B, De Grandcourt A, Burban B, Flechard C, et al. 2012. Ground-based Network of NDVI measurements for tracking temporal dynamics of canopy structure and vegetation phenology in different biomes. *Remote Sensing of Environment* **123**, 234–245.

Hmimina G, Dufrêne E, Pontailier J-Y, Delpierre N, Aubinet M, Caquet B, de Grandcourt A, Burban B, Flechard C, Granier A, et al. 2013. Evaluation of the potential of MODIS satellite data to predict vegetation phenology in different biomes: An investigation using ground-based NDVI measurements. *Remote Sensing of Environment* **132**, 145–158.

Hmimina G, Dufrene E, Soudani K. 2014. Relationship between photochemical reflectance index and leaf ecophysiological and biochemical parameters under two different water statuses: towards a rapid and efficient correction method using real-time measurements. *Plant, Cell & Environment* **37**, 473–487.

Soudani K, Hmimina G, Dufrêne E, Berveiller D, Delpierre N, Ourcival J-M, Rambal S, Joffre R. 2014. Relationships between photochemical reflectance index and light-use efficiency in deciduous and evergreen broadleaf forests. *Remote Sensing of Environment* **144**, 73–84.

Hmimina G, Merlier E, Dufrêne E, Soudani K. 2015. Deconvolution of pigment and physiologically-related PRI variability at the canopy scale over an entire growing season. *Plant, Cell & Environment* **38**, 1578-90.

Merlier E, Hmimina G, Dufrêne E, Soudani K. 2015. Explaining the variability of the photochemical reflectance index (PRI) at the canopy-scale: Disentangling the effects of phenological and physiological changes. *Journal of Photochemistry and Photobiology B: Biology* **151**, 161–171.

Teaching

2010-2013 : Junior lecturer in a BSc course: Functional and community ecology (64h/year).

Supervision

- PhD :** Elodie Merlier (Biology, University Paris-Sud XI, France). Co-supervision.
- MSc :** Nicolas Hombert (bioengineering, Agroparistech, France)
- BSc :** Yasmine Maricar (Computer sciences, ENSIIE, France)
Anthony Leja (Electronics, DUT GEII, Ville d'Avray, France)
Emilie Barthe (Biology, University Paris-Sud XI, France)

Administrative and collective responsibilities

- Project management, communication (inter/extern)
- Recruitment and supervision of interns and graduate students
- Design and management of a GPU-based HPC platform
- Setup and management of a prototyping platform (electronics/3D printing)