

# ERIC MARCON

Currently lecturer and researcher with AgroParisTech, PhD.

I am a researcher in Tropical Ecology with [Amap lab](#), a professor at [AgroParisTech](#) and a coordinator of the [BioGET](#) course of the Biodiversity, Ecology and Evolution master's degree at AgroParisTech and Montpellier University.

I'm the director of training with [Ceba Excellence Laboratory](#) (Centre d'Etudes de la Biodiversité Amazonienne) and a member of the [Scientific Council](#) of the French Office for Biodiversity.

I am 56 years old and I live in Montpellier, France.








## PROFESSIONAL EXPERIENCE

- Présent**  
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2020  
**Lecturer-researcher in charge of a master's programme**  
AgroParisTech, Amap lab.  Montpellier, France
- 2020  
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2006  
**Campus director with AgroParisTech**  
AgroParisTech  Kourou, French Guiana
- 2006  
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2002  
**Educational engineer**  
Ecole Nationale du Génie Rural, des Eaux et des Forêts (post-graduate, environment engineering and public administration school, now merged with AgroParisTech)  
 Kourou, French Guiana
- 2002  
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1999  
**Head of IT at Cemagref General Management**  
Research Institute for Agricultural and Environmental Engineering (now merged with Inrae: National Research Institute for Agriculture, Food and Environment)  
 Antony, France
- 1997  
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1995  
**Head of IT at Engref General Management**  
Ecole Nationale du Génie Rural, des Eaux et des Forêts  
 Paris, France
- 1995  
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1991  
**Forest engineer**  
Head of Division with the National Forest Office  
 Charleville-Mézières, France

## EDUCATION

- 2016  
**University of French Guiana**  
Habilitation à Diriger des Recherches (French qualification to supervise research) in Ecology  
 Kourou, French Guiana  
[Thesis](#): Measuring biodiversity and spatial structures (in French)
- 2010  
**AgroParisTech**  
PhD in Ecology  
 Paris, France  
[Thesis](#): Spatial statistics with applications to ecology and economics (in French)

## CONTACT INFO

-  [eric.marcon@agroparistech.fr](mailto:eric.marcon@agroparistech.fr)
-  [Home Page](#)
-  [Github](#)
-  [Google Scholar](#)
-  +33 7 87 05 70 55

## SKILLS

Experienced in management, research, teaching, forestry and IT.

Skilled in ecology, economics, forest science, statistics, data analysis and modelling.

Highly skilled in R.

## LANGUAGE

- French: mother tongue (C2)
- English: fluent (C1)
- Italian: advanced (B2)
- Portuguese: advanced (B1)
- Spanish: operational (A2)

- 1999 • **Ecole Nationale du Génie Rural, des Eaux et des Forêts**  
Post-Graduate Engineering School of Public Administration  
📍 Paris, France
- 1999 • **University of Paris, Panthéon Sorbonne**  
MSc in International Economic  
📍 Paris, France  
  
Thesis: The international timber trade (in French)
- 1990 • **Ecole Nationale des Ingénieurs des Travaux des Eaux et Forêts**  
Graduate Engineering School of Forestry  
📍 Nogent sur Vernisson, France

## RESEARCH EXPERIENCE

- Present | 2020 • **Researcher in Tropical Ecology**  
Associate researcher at AMAP lab.  
📍 Montpellier, France
- 2020 | 2006 • **Head of Research Unit Ecology of Guiana Forests**  
AgroParisTech  
📍 Kourou, French Guiana  
• Deputy director from 2006 to 2009 and director from 2010.

 [Amap Lab](#)

 [EcoFoG Lab](#)

## TEACHING EXPERIENCE

- Present | 2020 • **Biodiversity, Ecology and Evolution, BioGET master's programme**  
AgroParisTech and University of Montpellier  
📍 Montpellier, France  
I coordinate the Plant Biodiversity and Management of Tropical Ecosystems (BioGET) programme, which is co-organised by the University of Montpellier and AgroParisTech.
- Present | 2022 • **AgroParisTech final year**  
AgroParisTech  
📍 Montpellier, France  
I teach tropical forest ecology, epistemology in ecology and statistics with R to final-year, graduate engineering students in the Environmental Management of Tropical Ecosystems and Forests major.
- Present | 2010 • **Biodiversity, Ecology and Evolution, EFT master's programme**  
AgroParisTech and University of French Guiana  
📍 Kourou, French Guiana  
I teach biodiversity measurement and species abundance distributions to Master 2 students in the Ecology of Tropical Forests programme. This course receives students from the Erasmus Mundus Tropimundo Master's, coordinated by the Free University of Brussels.
- Present | 2022 • **Erasmus Mundus Global Forestry master's programme**  
University of Copenhagen  
📍 Copenhagen, Denmark  
I teach tropical forest ecology and sustainable forest management in the Erasmus Mundus Global Forestry Master 1 programme, coordinated by the University of Copenhagen.

 [Master BioGET](#)

 [Geeft MSc](#)

 [EFT MSc](#)

 [Tropimundo MSc](#)

 [Global Forestry MSc](#)



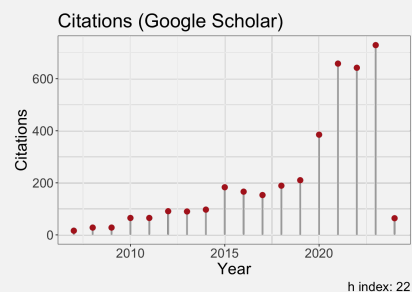
## PUBLICATIONS

2017  
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2012

### Measurement of Biodiversity

I wrote a series of papers to contribute to the development of methods to measure diversity rigorously, including an R package and a book.

- Grabchak, M., Marcon, E., Lang, G., & Zhang, Z. (2017). The generalized Simpson's entropy is a measure of biodiversity. *Plos One*, **12**, [e0173305](#).
- Buckland, S. T., Yuan, Y., & Marcon, E. (2017). Measuring temporal trends in biodiversity. *ASTA Advances in Statistical Analysis*, **101**, [461–474](#).
- Pavoine, S., Marcon, E., & Ricotta, C. (2016). 'Equivalent numbers' for species, phylogenetic or functional diversity in a nested hierarchy of multiple scales. *Methods in Ecology and Evolution*, **7**(10), [1152–1163](#).
- Marcon, E., & Hérault, B. (2015). Decomposing phylodiversity. *Methods in Ecology and Evolution*, **6**, [333–339](#).
- Marcon, E., & Hérault, B. (2015). *entropart*, an R package to measure and partition diversity. *Journal of Statistical Software*, **67**, [1–26](#).
- Marcon, E., Scotti, I., Hérault, B., Rossi, V., & Lang, G. (2014). Generalization of the partitioning of Shannon diversity. *Plos One*, **9**, [e90289](#).
- Marcon, E., Hérault, B., Baraloto, C., & Lang, G. (2012). The decomposition of Shannon's entropy and a confidence interval for beta diversity. *Oikos*, **121**, [516–522](#).



## ● Characterization of spatial patterns

I co-authored with Florence Puech a series of papers in the field of spatial microeconometrics. An R package is available.

- Marcon, E., & Puech, F. (2023). Mapping distributions in non-homogeneous space with distance-based methods. *Journal of Spatial Econometrics*, **4**, [13](#).
- Lang, G., Marcon, E., & Puech, F. (2020). Distance-based measures of spatial concentration: Introducing a relative density function. *The Annals of Regional Science*, **64**, [243–265](#).
- Marcon, E. (2019). Mesure de la biodiversité et de la structuration spatiale de l'activité économique par l'entropie. *Revue Économique*, **70**(3), [305–326](#). [English translation](#).
- Floch, J.-M., Marcon, E., & Puech, F. (2018). Spatial distribution of points. In V. Loonis & M.-P. (de) Bellefon (Eds.), *Handbook of spatial analysis* (pp. [71–111](#)). Insee-Eurostat.
- Marcon, E., & Puech, F. (2017). A typology of distance-based measures of spatial concentration. *Regional Science and Urban Economics*, **62**, [56–67](#).
- Marcon, E., Traissac, S., Puech, F., & Lang, G. (2015). Tools to characterize point patterns: *dbmss* for R. *Journal of Statistical Software*, **67**, [1–15](#).
- Marcon, E., Traissac, S., & Lang, G. (2013). A statistical test for Ripley's function rejection of poisson null hypothesis. *ISRN Ecology*, [Article ID 753475](#).
- Lang, G., & Marcon, E. (2013). Testing randomness of spatial point patterns with the Ripley statistic. *ESAIM: Probability and Statistics*, **17**, [767–788](#).
- Marcon, E., Puech, F., & Traissac, S. (2012). Characterizing the relative spatial structure of point patterns. *International Journal of Ecology*, [Article ID 619281](#).
- Marcon, E., & Puech, F. (2010). Measures of the geographic concentration of industries: Improving distance-based methods. *Journal of Economic Geography*, **10**, [745–762](#).
- Marcon, E., & Puech, F. (2003). Evaluating the geographic concentration of industries using distance-based methods. *Journal of Economic Geography*, **3**, [409–428](#).

2020  
|  
2007

## ● Tropical Forest Ecology

I contributed to several research programmes in French Guiana.

📍 Kourou, Guyane française

- Schmitt, S. *et al.* (2020). Topography consistently drives intra- and inter-specific leaf trait variation within tree species complexes in a Neotropical forest. *Oikos*, [129](#), 1521–1530.
- Richard-Hansen *et al.* (2015). Landscape patterns influence communities of medium- to large-bodied vertebrate in undisturbed terra firme forests of French Guiana. *Journal of Tropical Ecology*, [31](#), 423–436.
- Coste, S. *et al.* (2010). Assessing foliar chlorophyll contents with the SPAD-502 chlorophyll meter: A calibration test with thirteen tree species of tropical rainforest in French Guiana. *Annals of Forest Science*, [67](#), 607.
- Baraloto, C., Marcon, E., Morneau, F., Pavoine, S., & Roggy, J.-C. (2010). Integrating functional diversity into tropical forest plantation designs to study ecosystem processes. *Annals of Forest Science*, [67](#), 303.
- Blanc, L. *et al.* (2009). Dynamics of aboveground carbon stocks in a selectively logged tropical forest. *Ecological Applications*, [19](#), 1397–1404.
- Bonal, D. *et al.* (2007). The successional status of tropical rainforest tree species is associated with differences in leaf carbon isotope discrimination and functional traits. *Annals of Forest Science*, [64](#), 169–176.

2023  
|  
2019

## ● Ecology

I contributed to synthesis and large-scale studies papers in ecology.

- Bouchard, E. *et al.* (2024). Global patterns and environmental drivers of forest functional composition. *Global Ecology and Biogeography*, [33](#), 303–324.
- Mo, L. *et al.* (2023). Integrated global assessment of the natural forest carbon potential. *Nature*, [624](#), 92–101.
- Ma, H. *et al.* (2023). The global biogeography of tree leaf form and habit. *Nature Plants*, [9](#), 1795–1809.
- Hordijk, I. *et al.* (2023). Evenness mediates the global relationship between forest productivity and richness. *Journal of Ecology*, [111](#), 1308–1326.
- Delavaux, C. S. *et al.* (2023). Native diversity buffers against severity of non-native tree invasions. *Nature*, [621](#), 773–781.
- Liang, J. *et al.* (2022). Co-limitation towards lower latitudes shapes global forest diversity gradients. *Nature Ecology & Evolution*, [6](#), 1423–1437.
- Kattge, J. *et al.* (2020). TRY plant trait database – enhanced coverage and open access. *Global Change Biology*, [26](#), 119–188.
- Steidinger, B. S. *et al.* (2019). Climatic controls of decomposition drive the global biogeography of forest tree symbioses. *Nature*, [569](#), 404–408.

Present  
|  
2007

## Student supervision

I contributed to the publications of students I supervised.

- Nemetschek, D., Derroire, G., Marcon, E., Aubry-Kientz, M., Auer, J., Badouard, V., Baraloto, C., Bauman, D., Le Blaye, Q., Boisseaux, M., Bonal, D., Coste, S., Dardevet, E., Heuret, P., Hietz, P., Levionnois, S., Maréchaux, I., McMahon, S. M., Stahl, C., Vleminckx, J., Wanek, W., Ziegler, C., & Fortunel, C. (2024). Climate anomalies and neighbourhood crowding interact in shaping tree growth in old-growth and selectively logged tropical forests. *Journal of Ecology*, *in press*
- Penel, B., Freycon, V., Marcon, E., Rossi, V., Cornu, G., Bénédet, F., Forni, E., & Gourlet-Fleury, S. (2022). Macrotermes termite mounds influence the spatial pattern of tree species in two African rainforest sites, in northern Congo. But were they really forests in the past? *Journal of Tropical Ecology*, *38*, 267–274.
- Mirabel, A., Marcon, E., & Hérault, B. (2021). 30 Years of postdisturbance recruitment in a Neotropical forest. *Ecology and Evolution*, *11*, 14448–14458.
- Mirabel, A., Hérault, B., & Marcon, E. (2020). Diverging taxonomic and functional trajectories following disturbance in a Neotropical forest. *Science of The Total Environment*, *720*, 137397.
- Ollivier, M., Baraloto, C., & Marcon, E. (2007). A trait database for Guianan rain forest trees permits intra- and inter-specific contrasts. *Annals of Forest Science*, *64*, 781–786.

Present  
|  
2015

## Books

I wrote two scientific books which are available in open access on HAL and are kept up to date on GitHub.

- Marcon, E. (2021). Working R. UMR Amap. Montpellier, France. <https://doi.org/10.5281/zenodo.5778902>.
- Marcon, E. (2018). Mesures de la Biodiversité. UMR EcoFoG Kourou, France. <https://agroparistech.hal.science/cel-01205813v5>.

 [Working with R](#)

 [Travailler avec R](#) (in French)

 [Mesures de la Biodiversité](#) (in French)

Present  
|  
2003

## Reviewing

I've been a reviewer for many scientific journals.

- |   |   |
|---|---|
| • Acta Biotheoretica                              | • Journal of the Royal Statistical Society              |
| • Annals of Forest Science                        | • Journal of Theoretical Biology                        |
| • ASTA Advances in Statistical Analysis           | • Journal of Vegetation Science                         |
| • Biodiversity and Conservation                   | • Mathematics   |
| • Bois et Forêts des Tropiques                    | • Methods in Ecology and Evolution                      |
| • Cybergeog                                       | • Microorganisms  |
| • Diversity                                       | • Molecular Ecology Resources                           |
| • Ecography                                       | • Oecologia   |
| • Ecological Indicators                           | • Papers in Regional Science                            |
| • Ecology and Evolution                           | • PeerJ   |
| • Économie et Prévision                           | • Planning Practice and Research                        |
| • Économie et Statistique                         | • Plants  |
| • Empirical Economics                             | • Plos ONE  |
| • Entropy   | • Regional Science and Urban Economics                  |
| • Environmental and Ecological Statistics         | • Regional Studies                                      |
| • Environmetrics                                  | • Science of the Total Environment                      |
| • Forest Ecosystems                               | • Spatial Economic Analysis                             |
| • Geographical Analysis                           | • Stochastic Environmental Research and Risk Assessment |
| • Hacettepe Journal of Mathematics and Statistics | • The R Journal   |
| • Indian Journal of Science & Technology          | • Theoretical Ecology                                   |
| • Journal of Classification                       | • Urban Geography                                       |
| • Journal of Economic Geography                   | • Urban Studies   |
| • Journal of Geographical Systems                 | • Web Ecology   |



## SOFTWARE DEVELOPMENT

2015



### **entropart**

entropart is an R package that provides functions to calculate alpha, beta and gamma diversity of communities, including phylogenetic and functional diversity. Estimation-bias corrections are available.

 [Package entropart](#)

2015



### **dbmss**

dbmss is an R package for simple computation of spatial statistic functions of distance to characterize the spatial structures of mapped objects, including classical ones (Ripley's  $K$  and others) and more recent ones used by spatial economists (Duranton and Overman's  $K_d$ , Marcon and Puech's  $M$ ). It relies on spatstat for some core calculation.

 [Package dbmss](#)

2021



### **memoiR**

Templates to publish well-formatted and reproducible documents both in HTML and PDF formats.

 [Package memoir](#)