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**Education:**

3. October 2011 – 22 January 2016: **PhD** in terrestrial ecology: On the role of nutrients, climate and anthropogenic impacts in spatio-temporal variability of forest productivity (**Autonomous University of Barcelona – CREAF**)
2. 2010 – 2011: **MSc** in terrestrial ecology and management of biodiversity (**Autonomous University of Barcelona**)
1. 2005 – 2010: **BSc** in environmental sciences, specialised in environmental management (**University of Barcelona**).

**Languages:**

Fluent in Catalan, Spanish and English.

**Current position**

Post-doctoral fellow of the Research Foundation—Flanders (FWO)  
PLECO (Plants and Ecosystems)  
Department of Biology, University of Antwerp  
Wilrijk 2610, Belgium

**Career breaks**

2021: Paternity leave (04/01/2021 – 15/01/2021)

## **Author IDs:**

ORCID ID: 0000-0002-5661-3610

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Researcher ID: I-7240-2012

Google Scholar: <https://scholar.google.es/citations?user=oxAqE5MAAAAJ&hl=en>

Publons: <https://publons.com/researcher/990223/marcos-fernandez-martinez/>

## **Bibliometric indicators (2/07/2021)**

**SCI publications:** 54

**Book chapters:** 1

**Non-SCI publications and reports:** 17

**SCI publications Q1 (WoS):** 43

**SCI publications as first author:** 24

**SCI publications as second author:** 6

**SCI publications as last author:** 3

**SCI publications without PhD supervisors:** 12

**Reviews (Publons):** 51

**h-metrics and citations:**

Database	h-index	h10-index	Total citations
Google Scholar	21	33	1674
Scopus	19	27	1310
WoS	19	27	1251

## **Awards**

5. **2021** – **Shortlisted for The New Phytologist Tansley Medal** for excellence in plant science.

Awarded by the *New Phytologist* foundation to individuals in the early stages of their career. *Final award not released yet.*

4. **2019** – Premio eccellenza (excellence award) awarded by the Consiglio Nazionale delle Ricerche, Dipartimento di Scienze Bio-Agroalimentari, to the Italian co-authors of the paper **Fernández-Martínez, M.**, et al., “Nutrient scarcity as a selective pressure for mast seeding” published in **Nature Plants**.

3. **2019** – Prize City of Barcelona (environment and Earth sciences), to the best published paper of the year: **Fernández-Martínez, M.**, et al., “Global trends in carbon sinks and its relationship with CO<sub>2</sub> and temperature”, published in **Nature Climate Change**.

2. **2018** – Ecology award of the Institute of Catalan Studies (IEC) Ramón Margalef (3-annual award) to the best project in ecology

1. **2018** – Extraordinary prize of PhD. Autonomous University of Barcelona, to the best PhD thesis of the department during the year of defence.

### **Research experience:**

9. (01/10/2021 – 30/09/2024): **Postdoctoral researcher at CREAM (LaCaixa Junior Leader Fellowship).**

8. (01/10/2018 – 30/09/2021): **Postdoctoral researcher at Universiteit Antwerpen (FWO postdoctoral fellow).**

7. (01/10/2018 – 30/09/2020): **Postdoctoral researcher at Universiteit Antwerpen (FWO postdoctoral fellow)** & junior coordinator of the Imbalance-P project funded by the European Research Council Synergy grant ERC-2013-SyG 610028.

6. (01/10/2017 – 30/09/2018): **Postdoctoral researcher at Universiteit Antwerpen (BOF postdoctoral fellow)** & junior coordinator of the Imbalance-P project funded by the European Research Council Synergy grant ERC-2013-SyG 610028.

5. (01/01/2016 – 30/09/2017) – **Postdoctoral researcher at CREAM** & junior coordinator of the Imbalance-P project funded by the European Research Council Synergy grant ERC-2013-SyG 610028.

4. (01/01/2012 – 31/01/2015) – **Ph.D student (CREAM-Autonomous University of Barcelona)**

3. (15/04/2011 – 31/12/2011) – **Research support technician at CREAM**

2. (01/07/2010 – 31/09/2010) – **Research support technician at CREAM**

1. (01/09/2009 – 31/07/2010) – **Internship at Centre de Documentació de la Biodiversitat Vegetal (CeDocBiV), herbarium of the University of Barcelona.**

### **International research stays:**

2. (21/05/2018 – 8/06/2018). Research stay at the International Institute for Applied Systems Analysis (IIASA) to develop methods to investigate the non-linear dynamics of terrestrial carbon cycle using data from eddy-covariance towers. I was supervised by Drs. Michael Obersteiner and Stephan Pietsch (Ecosystems Services and Management (ESM) Program). Laxenburg, Austria.

1. (03/04/2017 – 03/05/2017). Research stay at the University of Nebraska, School of Natural Resources (Lincoln, Nebraska, USA), under the supervision of Prof. John Gamon, to work in remote sensing of the terrestrial carbon cycle.

### **Teaching and supervising experience:**

**November 2020.** Accredited as “Agregat” (accreditation of research) by the Agència per a la Qualitat del Sistema Universitari de Catalunya (Agency for the Quality of the Catalan University System).

**September 2019.** Accredited as “Lector” (tenure-track lecturer) by the Agència per a la Qualitat del Sistema Universitari de Catalunya (Agency for the Quality of the Catalan University System).

6. September 2020 – ongoing: Co-supervision of Susana Silvestre Carbonell (PhD student), with Prof. Josep Peñuelas and Dr. Romà Ogaya. Original title: “Estudi del efectes de una sequera experimental de llarg-termini en la vegetació d’ecosistemes Mediterranis”. English title: “Effects of long-term experimental drought on the vegetation of Mediterranean ecosystems”.

5. January 2018 – July 2018: Co-supervision of the bachelor’s final project of the student Marina Vergotti – BSc degree in Biology at the University of Barcelona, with a qualification of 8.9. English title: “Weather and trade-offs between growth and reproduction regulate fruit production in European forests”.

4. September 2017 – July 2018: Supervision of the master’s final project of the student Ferran Berloso Clarà – MSc degree in Ecology, management and restoration of the environment at the University of Barcelona, with a qualification of 8.4. English title: “Effects of climate, water chemistry and habitat conditions on functional traits of aquatic and semi-aquatic mosses in Mediterranean springs”.

3. January 2017 – June 2017: Co-supervision of Sara Raquel Marrafa, on her stay at CREAM working on the analysis of fruit production using remotely sensed vegetation indices in European forests.

2. September 2015 – July 2016: Supervision of the bachelor’s final project of the student Miquel Bes Garcia - Undergraduate in Environmental Sciences in the University of Barcelona, with a qualification of 9.2. English title: “Influence of water conductivity, pH and climate on the distribution and richness of bryophyte species in springs of Catalonia”. Original title: “Influència de la conductivitat, el pH i el clima en la distribució i riquesa d’espècies de briòfits a fonts naturals de Catalunya”.

1. October 2013 – November 2013: Field and laboratory instructor - Undergraduate edafology in Autonomous University of Barcelona. Graus de Biologia ambiental (assignatura Ciències del sòl, 13.24 hores) I Ciències Ambientals (Edafologia, 4.46 hores).

### **Funding acquired:**

12. 2021 (01/10/2021 – 30/09/2024) – **LaCaixa Junior Leader Fellowship – Incoming**. Project: “ES-BEF: Elemental Stoichiometry to understand Biodiversity-Ecosystem Functioning relationships”. Funder: **LaCaixa Foundation** (Barcelona, Spain) - COFUND European Union’s Horizon 2020 research and innovation program under the **Marie Skłodowska-Curie** grant agreement No 847648. **Ranked 2nd of 13 awarded** in the same panel, **~10% success ratio** over all participants. Funded: **301.500 €**. CREAM.

11. 2021 (01/10/2021 – 30/09/2024) – **Juan de la Cierva – Incorporación Postdoctoral fellowships**. Funder: **Agencia Estatal de Investigación – Ministerio de Ciencia e Innovación**. Reference: IJC2020-042630-I. **Ranked 1st of 36 awarded**. Score: **99.5/100**. Funded: **36.800 €**. CREAM. *Awarded but not accepted* due to incompatibility with **LaCaixa Junior Leader fellowship**.

10. 2021 (01/09/2021 – 31/08/2024) – **Spanish research projects I+D+i – 2020: Retos Investigación, Jóvenes Investigadores**. Project: “Chaos theory and Elemental Stoichiometry to understand Biodiversity-Ecosystem Functioning relationships (CHES-BEF)”. Funder: **Agencia Estatal de Investigación – Ministerio de Ciencia e Innovación**. Reference: PID2020-115043RJ-I00. Score: **93.75/100**. Funded: **181.500 €**. University of Barcelona. *Awarded but not accepted* due to incompatibility with **LaCaixa Junior Leader fellowship**.

9. 2020 (01/01/2021 – 31/12/2023) – Postdoctoral position at CREAM within the **SEVERO OCHOA** program (2018 SEVERO OCHOA Excellence Centers, ref. CEX2018-000828-S, from the Agencia Estatal de Investigación). **Ranked 1st of 3 awarded**. Funder: **CREAM** (Bellaterra, Spain). *Awarded but not accepted* due to incompatibility with **LaCaixa Junior Leader fellowship**. CREAM.

8. 2020 (01/04/2020 – 31/03/2021) – Kleine project of the BOF. Project: Unravelling the links between exudation, VOC emission, photosynthesis and elemental composition in bryophytes. Funder: **Bijzonder Onderzoeksfonds** (Antwerpen, Vlaanderen). Reference FFB200044. Funded: **9998 €**. University of Antwerp.

7. 2019 (01/3/2019 – 28/2/2020) – Small grant of the **British Ecological Society**. Project: Variability of moss elemental composition in semi-natural springs. Reference SR18/1341. Funded: **5000 £**. University of Antwerp.

6. 2018 (01/10/2018 – 30/9/2021) – **FWO (Research Foundation – Flanders)** Post-doctoral fellowship, project BIONUCLIM. Reference 12Q4119N. Funded: **257.600 €**. University of Antwerp.
  
5. 2018 (21/5/2018 – 8/6/2018) – International mobility fellowship from the **FWO (Research Foundation – Flanders)** for a short stay to work at IIASA (International Institute for Applied Systems Analysis), Laxenburg (Austria). Reference K213418N. Funded: **1.634 €**. University of Antwerp – IIASA (Austria).
  
4. 2017 (01/10/2017 – 30/09/2018) – Post-doctoral subsidy of the University of Antwerp (1-year contract). BIONUCLIM project. Funder: **Bijzonder Onderzoeksfonds (BOF)**. Funded: **41.400€**. University of Antwerp.
  
3. 2017 (01/07/2017 – 30/09/2017) – International mobility grants "José Castillejo" for young doctors (2017 call), to visit Prof. John Gammon at the University of Nebraska, Nebraska, United States of America. English title: "Calculation of the PRI index (Photochemical Reflectance Index) at the global scale". Funder: **Spanish ministry of education, culture and sports**. Reference: CAS17/00064. *Awarded but not accepted* due to delayed resolution of the grant and consequent schedule incompatibility with a new starting post-doctoral contract at the University of Antwerpen (#4, see above). Funded: **5.929€**. CREAM – University of Nebraska (USA).
  
2. 2014 (22/9/2014 – 28/9/2014) – **European Science Foundation (ESF)** Research Networking Programmes – Activity: TTORCH: Tall Tower and Surface Research Network for Verification of Climate Relevant Emissions of Human Origin. Short Visit Grant 6805 to attend to the 1<sup>st</sup> ICOS Science Conference and discuss ongoing projects with Drs Sara Vicca and Ivan Janssens. Funded: **468.74 €**. CREAM.
  
1. 2013 (01/01/2013 – 31/12/2015) – 3-year doctoral scholarship. Competitive fellowship FI DGR 2013 – **AGAUR, Catalan Government**. CREAM.

### **SCI Publications:**

54. **2021 – Fernández-Martínez, M.,** Corbera, J., Cano-Rocabayera, O., Sabater, F., Preece, C. Do bryophyte elemental concentrations explain their morphological traits? **Plants** xx, xx-xx. DOI:
  
53. **2021 – Fernández-Martínez, M.,** Preece, C., Corbera, J., Cano, O., Garcia-Porta, J., Bogdziewicz, M., Sardans, J., Janssens, I.A., Sabater, F., Peñuelas, J. Nutrients control reproductive traits of hygrophytic bryophytes. **Freshwater biology** 66, 1436-1446. DOI: 10.1111/fwb.13729.

52. **2021** – **Fernández-Martínez, M.**, Preece, C., Corbera, J., Cano, O., Garcia-Porta, J., Sardans, J., Janssens, I.A., Sabater, F., Peñuelas, J. Bryophyte C:N:P stoichiometry, biogeochemical niches, and elementome plasticity driven by environment and coexistence **Ecology Letters** 24, 1375-1386. DOI: 10.1111/ele.13752.

51. **2021** – Feng, X., Fu, B., Zhang, Y., Pan, N., Zeng, Z., Tian, H., Lyu, Y., Chen, Y., Ciais, P., Wang, Y., Zhang, L., Cheng, L., Maestre, F., **Fernández-Martínez, M.**, Sardans, J., Peñuelas, J. Recent leveling off of vegetation greenness and primary production reveals the increasing soil water limitations on the greening Earth. **Science Bulletin**, *in press*. DOI:10.1016/j.scib.2021.02.023.

50. **2021** – Liu, D., Zhang, C., Ogaya, R., **Fernández-Martínez, M.**, Pugh, T., Peñuelas, J. Increasing climatic sensitivity of global grassland vegetation biomass and species diversity correlates with water availability. **New Phytologist** 230, 1761-1771. DOI: 10.1111/nph.17269.

49. **2021** – **Fernández-Martínez, M.**, Peñuelas, J. Measuring temporal patterns in ecology: the case of mast seeding. **Ecology & Evolution** 11, 2990-2996, ece3.7291. DOI: 10.1002/ECE3.7291.

48. **2021** – Sardans, J., Vallicrosa, H., Zuccarini, P. Farré-Armengol, G., **Fernández-Martínez, M.**, Peguero, G., Gargallo-Garriga, A., Ciais, P., Janssens, I.A., Obersteiner, M., Richter, A., Peñuelas, J. Empirical support for the Biogeochemical Niche Hypothesis in forest trees. **Nature Ecology & Evolution** 5, 184–194. DOI: 10.1038/s41559-020-01348-1.

47. **2020** – Wang, S., Zhang, Y., Ju, W., Chen, J.M., Ciais, P., Cescatti, A., Sardans, J., Janssens, I.A., Wu, M., Berry, J.A., Campbell, E., **Fernández-Martínez, M.**, Alkama, R., Sitch, S., Friedlingstein, P., Smith, W.K., Yuan, W., He, W., Lombardozzi, D., Kautz, M., Zhu, D., Lienert, S., Kato, E., Poulter, B., Sanders, T.G.M., Krüger, I., Wang, R., Zeng, N., Tian, H., Vuichard, N., Jain, A.K., Wiltshire, A., Haverd, V., Goll, D.S., Peñuelas, J. Recent global decline of CO<sub>2</sub> fertilization effects on vegetation photosynthesis. **Science** 370 (6522), 1295-1300. DOI: 10.1126/science.abb7772.

46. **2020** – **Fernández-Martínez, M.**, Sardans, J., Musavi, T., Migliavacca, M., Iturrate-Garcia, M., Scholes, R.J., Peñuelas, J., Janssens, I.A. 2020. The role of climate, foliar stoichiometry and plant diversity on ecosystem carbon balance. **Global Change Biology** 26 (12), 7067-7078. DOI: 10.1111/gcb.15385.

45. **2020** – Collalti, A., Ibrom, A., Stockmarr, A., Cescatti, A., Alkama, R., **Fernández-Martínez, M.**, Matteucci, G., Sitch, S., Friedlingstein, P., Ciais, P., Goll, D., Nabel, J., Pongratz, J., Arneeth, A., Haverd, V., Prentice, I. Forest production efficiency increases with growth temperature. **Nature Communications** 11, 5322. DOI: 10.1038/s41467-020-19187-w.

44. **2020** – Bogdziewicz, M., Szymkowiak, J., Bonal, R., Hacket-Pain, A., Espelta, J.M., Pesendorfer, M., Lukasz, G., Idalia, K., Belmonte, J., De Linares, C., Peñuelas, J., **Fernández-Martínez, M.** What drives phenological synchrony? Warm springs advance and desynchronize flowering in oaks. **Agricultural and Forest Meteorology** 294, 108140. DOI: 10.1016/j.agrformet.2020.108140.
43. **2020** – Wang, C., Fang, Y., An, W., Zeng, C., Wang, W., Sardans, J., **Fernández-Martínez, M.**, Peñuelas, J. Acid rain mediated nitrogen and sulfur deposition alters soil nitrogen, phosphorus and carbon fractions in a subtropical paddy. **Catena** 195, 104876. DOI: 10.1016/j.catena.2020.104876.
42. **2020** – Farré-Armengol, G., **Fernández-Martínez, M.**, Filella, I., Junker, R.R., Penuelas, J. Deciphering the biotic and climatic factors that influence floral scents: A systematic review of floral volatile emissions. **Frontiers in Plant Science** 11, 1154. DOI: 10.3389/fpls.2020.01154.
41. **2020** – **Fernández-Martínez, M.**, Sardans, J., Sayol, F., LaMontagne, J.M., Bogdziewicz, M., Collalti, A., Hacket-Pain, A., Vacchiano, G., Espelta, J.M., Peñuelas, J., Janssens, I.A. Reply to: nutrient scarcity cannot cause mast seeding. **Nature Plants** 6, 763–765. DOI: 10.1038/s41477-020-0703-6.
40. **2020** – Bogdziewicz, M., **Fernández-Martínez, M.**, Espelta, J.M., Ogaya, R., Peñuelas, J. Is forest fecundity resistant to drought? Results from an 18-year rainfall-reduction experiment. **New Phytologist** 227, 1073–1080. DOI:10.1111/nph.16597.
39. **2020** – Peñuelas, J., **Fernández-Martínez, M.**, Vallicrosa, H., Maspons, J., Zuccarini, P., Carnicer, J., Sanders, T.G.M., Krüger, I., Obersteiner, M., Janssens, I.A., Ciais, P., Sardans, J. Increasing atmospheric CO<sub>2</sub> concentrations correlate with declining nutritional status of European forests. **Communications Biology** 3, 125. DOI:10.1038/s42003-020-0839-y.
38. **2020** – Pensendorfer, M., Bogdziewicz, M., Szymkowiak J., Borowski Z., Kantorowicz W., Espelta J.M., **Fernandez-Martinez M.** Investigating the relationship between climate, stand age, and temporal trends in masting behavior of European forest trees. **Global Change Biology** 263, 1654-1667. DOI:10.1111/gcb.14945
37. **2020** – **Fernández-Martínez, M.**, Corbera, J., Domene, X., Sayol, F., Sabater, F., Preece, C. Nitrate pollution reduces bryophyte diversity in Mediterranean springs. **Science of the total environment** 705, 135823. DOI:10.1016/j.scitotenv.2019.135823
36. **2019** – **Fernández-Martínez, M.**, Pearse, I., Sardans, J., Sayol, F., Koenig, W.D., LaMontagne, J.M., Bogdziewicz, M., Collalti, A., Hacket-Pain, A., Vacchiano, G., Espelta, J.M., Peñuelas, J., Janssens, I.A. 2019. Nutrient scarcity as a selective pressure for mast seeding. **Nature Plants** 5, 1222–1228. DOI:10.1038/s41477-019-0549-y



35. **2019** – **Marcos Fernández-Martínez**, Ferran Berlosó, Jordi Corbera, Joan Garcia-Porta, Ferran Sayol, Catherine Preece, Francesc Sabater. Towards a moss sclerophylly continuum: evolutionary history, water chemistry and climate control traits of hygrophytic mosses. **Functional Ecology** 33, 2273-2289. DOI: 10.1111/1365-2435.13443
34. Peguero, G., Sardans, J., Dolores Asensio, **Marcos Fernández-Martínez**, Albert Gargallo-Garriga, Oriol Grau, Joan Llusà, Olga Margalef, Laura Márquez, Romà Ogaya, Ifigenia Urbina, Elodie A. Courtois, Clément Stahl, Leandro Van Langenhove, Lore T. Verryckt, Andreas Richter, Ivan A. Janssens and Josep Peñuelas. 2019. Nutrient scarcity strengthens soil fauna control over leaf litter decomposition in tropical rainforests. **Proceedings of the Royal Society of London B** 286, 20191300, 1-9. DOI:10.1098/rspb.2019.1300
33. **2019** – Kevin Van Sundert, Dajana Radujković, Nathalie Cools, Bruno De Vos, Sophia Etzold, **Marcos Fernández-Martínez**, Ivan Janssens, Päivi Merilä, Josep Peñuelas, Jordi Sardans, Johan Stendahl, César Terrer, Sara Vicca. Towards comparable assessment of the soil nutrient status across scales – review and development of nutrient metrics. **Global Change Biology** 26, 392 – 409. DOI: 10.1111/gcb.14802
32. **2019** – Marina Vergotti, **Marcos Fernández-Martínez**, SC Kefauver, Ivan A. Janssens, Josep Peñuelas. Weather and trade-offs between growth and reproduction regulate fruit production in European forests. **Agricultural and Forest Meteorology** 279, 107711. DOI: 10.1016/j.agrformet.2019.107711
31. **2019** – Ana Bastos, Philippe Ciais, Frédéric Chevallier, Christian Rödenbeck, Ashley P Ballantyne, Fabienne Maignan, Yi Yin, **Marcos Fernández-Martínez**, Pierre Friedlingstein, Josep Peñuelas, Shilong L Piao, Stephen Sitch, William K Smith, Xuhui Wang, Zaichun Zhu, Vanessa Haverd, Etsushi Kato, Atul K Jain, Sebastian Lienert, Danica Lombardozzi, Julia EMS Nabel, Philippe Peylin, Ben Poulter, Dan Zhu. Contrasting effects of CO<sub>2</sub> fertilisation, land-use change and warming on seasonal amplitude of northern hemisphere CO<sub>2</sub> exchange. **Atmospheric Chemistry and Physics** 19, 12361–12375. DOI: 10.5194/acp-19-12361-2019.
30. **2019** – Michał Bogdziewicz, Magdalena Żywiec, Josep M Espelta, **Marcos Fernández-Martínez**, Rafael Calama, Mateusz Ledwoń, Eliot McIntire, Elizabeth E Crone. Environmental veto synchronizes mast seeding in four contrasting tree species. **The American Naturalist**, 194(2), 246-259. DOI: 10.1086/704111
29. **2019** – **Marcos Fernández-Martínez**, Rong Yu, John Gamon, Gabriel Hmimina, Iolanda Filella, Manuela Balzarolo, Benjamin Stocker and Josep Peñuelas. Monitoring Spatial and Temporal Variabilities of Gross Primary Production Using MAIAC MODIS Data. **Remote Sensing**, 11(7), 874. DOI: 10.3390/rs11070874.

28. **2019** – Josep Peñuelas, **Marcos Fernández-Martínez**, Philippe Ciais, David Jou, Shilong Piao, Michael Obersteiner, Sara Vicca, Ivan Janssens, Jordi Sardans. The bioelements, the elementome and the “biogeochemical niche”. **Ecology** 100, ee02652. DOI: 10.1002/ecy.2652.
27. **2019** – **Fernández-Martínez, M.**, Margalef, O., Sayol, F., Asensio, D., Bagaria, G., Corbera, J., Preece, C. (2019). Sea spray influences water chemical composition of Mediterranean semi-natural springs. **Catena**, 173(2019), 414–423. doi:10.1016/j.catena.2018.10.035.
26. **2019** – **Fernández-Martínez, M.**, J. Sardans, F. Chevallier, P. Ciais, M. Obersteiner, S. Vicca, J. G. Canadell, A. Bastos, P. Friedlingstein, S. Sitch, S. L. Piao, I. A. Janssens, and J. Peñuelas. 2019. Global trends in carbon sinks and its relationship with CO<sub>2</sub> and temperature. **Nature Climate Change** 9, 73-79. DOI: 10.1038/s41558-018-0367-7.
25. **2019** – Bogdziewicz, M., Szymkowiak, J., **Fernandez-Martinez, M.**, Peñuelas, J., Espelta, J.M. The effects of local climate on the correlation between weather and seed production differ in two species with contrasting masting habit. **Agricultural and Forest Meteorology** 268, 109–115. DOI: 10.1016/j.agrformet.2019.01.016
24. **2018** – **Fernández-Martínez, M.**, Vicca, S., Janssens, I.A., Carnicer, J., Martín-Vide, J., Peñuelas, J. 2018. The consecutive disparity index, D: a measure of temporal variability in ecological studies. **Ecosphere** 9(12), e02527, doi: 10.1002/ecs2.2527. **IF:** 2.746 (2017), **Q2 Ecology**
23. **2018** – Iolanda Filella, Chao Zhang, Roger Seco, Mark Potosnak, Alex Guenther, Thomas Karl, John Gamon, Stephen Pallardy, Lianhong Gu, Saewung Kim, Manuela Balzarolo, **Marcos Fernandez-Martinez** and Josep Peñuelas. A MODIS Photochemical Reflectance Index (PRI) as an Estimator of Isoprene Emissions in a Temperate Deciduous Forest. **Remote Sensing**, 10(4), 557; DOI: 10.3390/rs10040557. **IF:** 2.671 (2017), **Q1**, Earth and Planetary Sciences (miscellaneous)
22. **2018** – Miquel Bes, Jordi Corbera, Ferran Sayol, Guillem Bagaria, Catherine Preece, Aida viza, Francesc Sabater and **Marcos Fernández-Martínez**. On the influence of water conductivity, pH and climate on bryophyte assemblages in Catalan semi-natural springs. **Journal of Bryology** 40 (2), 149-158. DOI: 10.1080/03736687.2018.1446484
21. **2018** - **Marcos Fernández-Martínez**, Joan Llusià, Iolanda Filella, Ülo Niinemets, Almut Arneth, Ian J Wright, Francesco Loreto and Josep Peñuelas. Nutrient-rich plants emit a less intense blend of volatile isoprenoids. **New Phytologist** 220, 773-784. DOI: 10.1111/nph.14889. **IF:** 7.433, **Q1** Plant sciences.

20. **2017** - **Fernández-Martínez, M.**, Bogdziewicz, M., Espelta, JM., Penuelas J. Nature beyond linearity: meteorological variability and Jensen's inequality can explain mast seeding behaviour. **Frontiers in Ecology and Evolution** 5, 134. 10.3389/fevo.2017.00134. **IF**: 2.686, **Q2** Ecology.
19. **2017** - Josep Peñuelas, Philippe Ciais, Josep G Canadell, Ivan A Janssens, **Marcos Fernández-Martínez**, Jofre Carnicer, Michael Obersteiner, Shilong Piao, Robert Vautard, Jordi Sardans. Shifting from a fertilization-dominated to a warming-dominated period. **Nature Ecology & Evolution** 1, 1438–1445. DOI: 10.1038/s41559-017-0274-8. **IF**: 10.965, **Q1** Ecology.
18. **2017** - **Fernández-Martínez, M.**, Vicca, S., Janssens, I.A., Ciais, P., Obersteiner, M., Bartrons, M., Sardans, J., Verger, A., Canadell, J.G., Chevallier, F., Wang, X., Bernhofer, C., Curtis, P.S., Gianelle, D., Grünwald, T., Heinesch, B., Ibrom, A., Knohl, A., Laurila, T., Law, B.E., Limousin, J.M., Longdoz, B., Loustau, D., Mammarella, I., Matteucci, G., Monson, R.K., Montagnani, L., Moors, E.J., Munger, J.W., Papale, D., Piao, S.L., Peñuelas, J. Atmospheric deposition, CO<sub>2</sub>, and change in the land carbon sink. **Scientific Reports** 7, 9632. DOI: 10.1038/s41598-017-08755-8. **IF**: 4.122, **Q1** Multidisciplinary sciences.
17. **2017** - M Bogdziewicz, **M Fernández-Martínez**, R Bonal, J Belmonte, JM Espelta. The Moran effect and environmental vetoes: phenological synchrony and drought drive seed production in a Mediterranean oak. **Proceedings of the Royal Society of London B** 284, 20171784. DOI: 10.1098/rspb.2017.1784. **IF**: 4.847, **Q1**: Environmental Science (miscellaneous).
16. **2017** - Josep Peñuelas, Jordi Sardans, Iolanda Filella, Marc Estiarte, Joan Llusà, Romà Ogaya, Jofre Carnicer, Mireia Bartrons, Albert Rivas-Ubach, Oriol Grau, Guille Peguero, Olga Margalef, Sergi Pla-Rabés, Constantí Stefanescu, Dolores Asensio, Catherine Preece, Lei Liu, Aleixandre Verger, Laura Rico, Adrià Barbeta, Ander Achotegui-Castells, Albert Gargallo-Garriga, Dominik Sperlich, Gerard Farré-Armengol, **Marcos Fernández-Martínez**, Daijun Liu, Chao Zhang, Ifigenia Urbina, Marta Camino, Maria Vives, Daniel Nadal-Sala, Santi Sabaté, Carles Gracia, Jaume Terradas. Assessment of the impacts of climate change on Mediterranean terrestrial ecosystems based on data from field experiments and long-term monitored field gradients in Catalonia. **Journal of Experimental Botany** 12, 1–21. DOI: 10.1016/j.envexpbot.2017.05.012. **IF**: 3.666, **Q1** Ecology, Evolution, Behavior and Systematics.
15. **2017** - Josep Peñuelas, Jordi Sardans, Iolanda Filella, Marc Estiarte, Joan Llusà, Romà Ogaya, Jofre Carnicer, Mireia Bartrons, Albert Rivas-Ubach, Oriol Grau, Guille Peguero, Olga Margalef, Sergi Pla-Rabés, Constantí Stefanescu, Dolores Asensio, Catherine Preece, Lei Liu, Aleixandre Verger, Adrià Barbeta, Ander Achotegui-Castells, Albert Gargallo-Garriga, Dominik Sperlich, Gerard Farré-Armengol, **Marcos Fernández-Martínez**, Daijun Liu, Chao Zhang, Ifigenia Urbina, Marta Camino-Serrano, Maria Vives-Inglà, Benjamin D Stocker, Manuela Balzarolo, Rossella Guerrieri, Marc Peaucelle, Sara Marañón-Jiménez, Kevin Bórnez-Mejías, Zhaobin Mu, Adrià Descals, Alejandro Castellanos, Jaume Terradas. Impacts of Global Change on

Mediterranean Forests and Their Services. **Forests** 8 (12), 463. DOI: 10.3390/f8120463. IF: 1.956, **Q1** Forestry.

14. **2017** - Gargallo-garriga, A., Wright, J.S., Sardans, J., Pérez-Trujillo, M., Oravec, M., Vecerová, K., Urban, O., **Fernández-Martínez, M.**, Parella, T. & Peñuelas, J. Long-term fertilization determines different metabolomic profiles and responses in saplings of three rainforest tree species with different adult canopy position. **Plos One** 12(5), 1–21, e0177030. DOI: 10.1371/journal.pone.0177030. IF: 2.766. **Q1** Agricultural and Biological Sciences (miscellaneous).

13. **2017** - Josep Maria Espelta, Harold Arias-LeClaire, **Marcos Fernández-Martínez**, Enrique Doblas-Miranda, Alberto Muñoz, Raúl Bonal. Beyond predator satiation: Masting but also the effects of rainfall stochasticity on weevils drive acorn predation. **Ecosphere** 8, 1-12. DOI: 10.1002/ecs2.1836. IF: 2.671, **Q2** Ecology.

12. **2017** - Margalef, O., Sardans, J., **Fernández-Martínez, M.**, Molowny-Horas, R., Janssens, I.A., Ciais, P., Goll, D., Richter, A., Obersteiner, M., Asensio, D. & Peñuelas, J. Global patterns of phosphatase activity in natural soils. **Scientific Reports** 7, 1337. DOI: 10.1038/s41598-017-01418-8. IF: 4.122, **Q1** Multidisciplinary sciences.

11. **2017** - **Fernández-Martínez, M.**, Vicca, S., Janssens, I.A., Espelta, J.M., Peñuelas, J. The role of nutrients, productivity and climate in determining tree fruit production in European forests. **New Phytologist** 213 (2), 669-679. DOI: 10.1111/nph.14193. IF: 7.433, **Q1** Plant sciences.

10. **2017** - **Fernández-Martínez, M.**, Vicca, S., Janssens, I.A., Espelta, J.M., Peñuelas, J. The North Atlantic Oscillation synchronises fruit production in western European Forests. **Ecography** 40 (7), 864-874. DOI: 10.1111/ecog.02296. IF: 4.520, **Q1** Ecology, Evolution, Behavior and Systematics.

9. **2016** - Sardans, J., Alonso, R., Carnicer, J, **Fernández-Martínez, M.**, Vivanco, M.G., Peñuelas, J. Factors influencing the foliar elemental composition and stoichiometry in forest trees in Spain. **Perspectives in Plant Ecology, Evolution and Systematics** 18, 52–69. IF: 3.123, **Q1** Ecology, Evolution, Behavior and Systematics.

8. **2016** - **Fernández-Martínez, M.**, S. Vicca, I. A. Janssens, M. Campioli, and J. Peñuelas. Nutrient availability and climate as the main determinants of the ratio of biomass to NPP in woody and non-woody forest compartments. **Trees, structure and function** 30, 775-783. DOI: 10.1007/s00468-015-1319-8. IF: 1.842, **Q1** Forestry.

7. **2015** - **Fernández-Martínez, M.**, Vicca, S., Janssens, I.A., Sardans, J., Luyssaert, S., et al., Reply to 'Uncertain effects of nutrient availability on global forest carbon balance' and 'Data

- quality and the role of nutrients in forest carbon-use efficiency'. **Nature Climate Change** 5 (11), 960-961. DOI: 10.1038/nclimate2794. IF: 17.184, **Q1** Environmental Sciences.
6. **2015** - Campioli, M., Vicca, S., Luyssaert, S., Bilcke, J., Ceschia, E., III, F.C., Ciais, P., **Fernández-Martínez, M.**, Malhi, Y., Obersteiner, M., Olefeldt, D., Papale, D., Piao, S., Peñuelas, J., Sullivan, P., Wang, X., Zenone, T., Janssens, I. Biomass production efficiency controlled by management in temperate and boreal ecosystems. **Nature Geoscience** 8, 843-846. DOI: 10.1038/ngeo2553. IF: 12.508, **Q1** Earth and Planetary Sciences (miscellaneous)
5. **2015** - Sardans, J., Alonso, R., Janssens, I., Carnicer, J., Vereseglou, S., Rillig, M.C., **Fernández-Martínez, M.**, Sanders, T.G.M., Peñuelas, J. Foliar and soil concentrations and stoichiometry of nitrogen and phosphorous across European *Pinus sylvestris* forests: relationships with climate, N deposition and tree growth. **Functional Ecology** 30, 676–689. doi:10.1111/1365-2435.12541. IF: 5.210, **Q1** Ecology, Evolution, Behavior and Systematics
4. **2015** - **Fernández-Martínez, M.**, Garbulsky, M., Peñuelas, J., Peguero, G., Espelta, J.M., Temporal trends in the enhanced vegetation index and spring weather predict seed production in Mediterranean oaks. **Plant Ecology**. 216, 1061–1072. doi:10.1007/s11258-015-0489-1. IF: 1.490, **Q1** Plant sciences.
3. **2014** - **Fernández-Martínez, M.**, Vicca, S., Janssens, I.A., Sardans, J., Luyssaert, S., Campioli, M., Chapin III, F.S., Ciais, P., Malhi, Y., Obersteiner, M., Papale, D., Piao, S.L., Reichstein, M., Rodà, F. & Peñuelas, J. Nutrient availability as the key regulator of global forest carbon balance. **Nature Climate Change**, 4, 471–476. DOI: 10.1038/nclimate2177. IF: 14.547, **Q1** Environmental Sciences. This paper lead to the publication of a “*news and views*” article in Nature Climate change: De Vries, W. (2014) Forest ecology: Nutrients trigger carbon storage. **Nature Climate Change**, 4, 425–426.
2. **2014** - **Fernández-Martínez, M.**, Vicca, S., Janssens, I. a, Campioli, M., Luyssaert, S., Sardans, J. & Peñuelas, J. Spatial variability and controls over biomass stocks, carbon fluxes and resource-use efficiencies in forest ecosystems. **Trees, structure and function**, 28, 597–611. DOI: 10.1007/s00468-013-0975-9. IF: 1.651, **Q1** Forestry.
1. **2012** - **Fernández-Martínez, M.**, Belmonte, J. & Espelta, J.M. Masting in oaks: Disentangling the effect of flowering phenology, airborne pollen load and drought. *Acta Oecologica*, 43, 51–59. DOI: 10.1016/j.actao.2012.05.006. IF: 1.621, **Q1** Nature and Landscape conservation

### **Books and book sections:**

1. **2011** - Espelta JM, Barbati A, Quevedo L, Tárrega R, Navascués P, Bonfil C, Peguero G, **Fernández-Martínez, M**, Rodrigo A. Post fire management of Mediterranean broadleaved forests. In (F. Moreira, P.M. Corona, M. Arianotsou, J. de las Heras, eds.). *Post-Fire Management and Restoration of Southern European Forests, Managing Forest Ecosystems 24*, DOI: 10.1007/978-94-007-2208-8\_8,

### **Reports:**

1. **2017** - Josep Peñuelas, Jordi Sardans, Iolanda Filella, Marc Estiarte, Joan Llusà, Romà Ogaya, Jofre Carnicer, Mireia Bartrons, Albert Rivas-Ubach, Oriol Grau, Guille Peguero, Olga Margalef, Sergi Pla, Constantí Stefanescu, Dolores Asensio, Catherine Preece, Lei Liu, Aleixandre Verger, Laura Rico, Adrià Barbeta, Ander Achotegui-Castells, Albert Gargallo-Garriga, Dominik Sperlich, Gerard Farré-Armengol, **Marcos Fernández-Martínez**, Megan Popkin, Jennifer Albrand, Chris Wheat, Daniel Nadal, Santi Sabaté, Carles Gracia, Maria Vives, Melodia Tamayo i Jaume Terradas. Ecosistemes terrestres. In (Javier Martín-Vide, eds.). *Tercer Informe Sobre El Canvi Climàtic a Catalunya*. Generalitat de Catalunya i Institut d'Estudis Catalans. ISBN 9788499653174 (IEC). – ISBN 9788439394488 (Generalitat de Catalunya).

### **Other scientific publications (Non-SCI):**

16. **2021** – Viza, A., Corbera, J., **Fernández-Martínez, M.**, Preece, C., Sabater, F. La vida invisible dels nostres rius: trets adaptatius dels macroinvertebrats als hàbitats fluvials. **L'Atzavara** 31, 121-136. DOI:10.2436/20.1502.atz31.120

15. **2021** – Corbera J., Viza, A., Torner, G., Preece, C., **Fernández-Martínez, M.** Seguiment de mamífers amb càmeres de parament fotogràfic a la serralada del Montnegre: resultats 2018-2019. **IV Trobada d'Estudiosos de la Serralada Litoral Central i VIII del Montnegre i el Corredor**, 294-303.

14. **2020** – **Fernández-Martínez, M.**, Sardans, J., Peñuelas, J. El Fòsfor: constructor d'ecosistemes. **L'Atzavara** 30, 51-56. DOI: 10.2436/20.1502.atz30.051

13. **2019** – **Fernández-Martínez, M.**, Corbera, J. El Montseny: terra de fonts, fonts de briòfits. **Monografies del Montseny** 34, 13-22.

12. **2019** – Poblador, S., Fernández-Martínez, M., Sabater, F. Com els arbres expliquen el pas del temps. **L'Atzavara** 29, 39-44.

11. **2018** – Espelta, J.M., Fernández-Martínez, M., Bogdziewicz, M., Peñuelas, J. Plantes anyívoles: entre l'abstinència i la disbauxa reproductiva. **L'Atzavara** 28, 15-21.
10. **2018** – Sayol, F., Corbera, J., Preece, C., Vilella, M., Asensio, L., Jover, M., Bagaria, G., Domene, X., **Fernández-Martínez, M.** 2018. El nitrat de les fonts del Lluçanès : efectes sobre les comunitats de briòfits (molses i hepàtiques). **Ausa** 29 [2017]: 513–532.
9. **2018** – Àvila, A., and **Fernández-Martínez, M.**, English title: Climate change in Montseny: analysis of trends in temperature of air and water in La Castanya Valley during the last 3 decades. Original title: El canvi climàtic al Montseny: anàlisi de les tendències de variació de la temperatura de l'aire i l'aigua a la Vall de La Castanya en les darreres 3 dècades. **IX Trobada d'Estudiosos del Montseny**, La Garriga, Barcelona, Catalonia, Spain.
8. **2018** – **Fernández-Martínez, M.**, Sayol, F., Bagaria, G., Fraile, I., Jover, M., Preece, C., Sabater, F., Viza, A., and Corbera, J. English title: Project springs: on the study of bryophyte communities of the springs. Original title: Projecte fonts, estudi de les comunitats de briòfits de les fonts. **IX Trobada d'Estudiosos del Montseny**, La Garriga, Barcelona, Catalonia, Spain.
7. **2017** – **Fernández-Martínez, M.**, Corbera, J., Torner, G., Bagaria, G., Sayol, F. Les fonts del Montseny: entre amenaces i oportunitats. **La sitja del llop** 42, 09–11.
6. **2017** - Miquel Bes, Jordi Corbera, Ferran Sayol, Guillem Bagaria, Miquel Jover, Catherine Preece, Francesc Sabater, Aida Viza, **Marcos Fernández-Martínez**. Efecte de les variables ambientals i hidrològiques sobre la riquesa i distribució dels briòfits fontinals a la Catalunya oriental. **Butlletí de la Institució Catalana d'Història Natural** 81, 121-134.
5. **2016** - Asensio D., Llusà J., Ogaya R., Sardans J., **Fernández-Martínez, M.**, Josep Peñuelas. Els compostos orgànics volàtils del sòl. **L'Atzavara** 26, 55-65.
4. **2016** - **Fernández-Martínez M.**, Bagaria, G., Cañizares, R., Raya, I., Preece, C., Margalef, O., Domene, X. Terra Negra: un sòl sobre pissarres al Montnegre. **L'Atzavara** 26, 67–72.
3. **2015** - Corbera J., **Fernández-Martínez M.**, Jover M., Torner G., Calpe M., Ciurana O., Sabater, F. Els briòfits de les fonts de la Serralada Litoral Central: composició específica i efecte dels paràmetres ambientals en la seva distribució. **L'Atzavara** 25, 105–116.
2. **2015** - Sabater, F., **Fernández-Martínez, M.**, Corbera, J., Calpe, M., Torner, G., Cano, O., Corbera, G., Ciurana, O., Parera, J.M. Caracterització hidrogeoquímica de les fonts de la Serralada Litoral Central en relació a la litologia i als factors ambientals. **L'Atzavara** 25, 93–104.
1. **2015** - **Fernández-Martínez M.**, Achotegui-Castells, A. Interdecadal variability of the North Atlantic Oscillation as a possible determinant of the frequency of floods in Arenys (NE Iberian Peninsula). **L'Atzavara** 25, 117–124.

## **Oral presentations and posters in scientific forums and conferences**

32. **2021 – Marcos Fernández-Martínez**, Catherine Preece, Ana-María Yáñez-Serrano, Oriol Cano, Jordi Corbera, Miguel Portillo-Estrada, Francesc Sabater, Ivan Janssens, Joan Llusà, Iolanda Filella. *Bryophyte elementomes, photosynthesis and emission of VOCs*. Lunchtime seminars of the Department of Biology – University of Antwerp. PLECO, Wilrijk, Belgium. **Oral online presentation invited** by Dr. Sílvia Poblador, 20<sup>th</sup> of April, 2021.

33. **2020 - Marcos Fernández-Martínez**, Catherine Preece, Jordi Corbera, Oriol Cano, Joan Garcia-Porta, Jordi Sardans, Ivan. A. Janssens, Francesc Sabater, Josep Peñuelas. *Bryophyte biogeochemical niches, C:N:P stoichiometry and elementome plasticity*. **BES annual Meeting – Festival of Ecology**, 14<sup>th</sup> - 18<sup>th</sup> December 2020. **Oral online presentation**, Session: Ecosystem and Functional Ecology (due to COVID19 restrictions). <https://player.vimeo.com/video/482099485>

32. **2020 - Marcos Fernández-Martínez**, Jordi Sardans, Josep Peñuelas, Ivan A. Janssens. *Exploring the effects of biodiversity and elemental stoichiometry on terrestrial carbon balance*. **EGU General Assembly 2020**, 4<sup>th</sup> - 8<sup>th</sup> May 2020 Vienna (Austria). **Online presentation**, Session: BG3.15 (due to COVID19 restrictions). DOI: 10.5194/egusphere-egu2020-1589.

31. **2020 - Fernández-Martínez, M.** *Are nutrients more important than biodiversity for terrestrial C balance*. 6th Annual Meeting of the Imbalance-P Project (European Research Council Synergy grant ERC-2013-SyG-610028). Laxenburg (Austria), 09-12 March, 2020. *Online meeting due to COVID-19*. **Oral presentation**.

30. **2019 – Corbera, J., Preece, C., Torner, G., Viza, A., and Fernández-Martínez, M.**, English title: *Monitoring of mammals using camera traps in Montnegre mountains, results from 2018-19*. Original title: *Seguiment de mamífers amb càmeres de fototrampeig al Montnegre, resultats 2018-19*. IV Trobada d'Estudiosos de la Serralada Litoral Central i VIII del Montnegre i el Corredor, Vallgorguina, Barcelona, Catalonia, Spain, 21st November 2019. **Oral presentation**.

29. **2019 – Marcos Fernández-Martínez**, Ferran Berlosó, Jordi Corbera, Joan Garcia-Porta, Ferran Sayol, Catherine Preece and Francesc Sabater. *On springs and mosses: where water chemistry, functional traits and evolutionary history meet*. Lunchtime seminars of the Department of Biology – University of Antwerp. PLECO, Wilrijk, Belgium. **Oral presentation invited** by Dr. Erik Verbruggen, 3<sup>rd</sup> of October, 2019.

28. **2019 - Marcos Fernández-Martínez**, F. Berlosó, J. Corbera, J. Garcia-Porta, C. Preece, F. Sayol, F. Sabater. *On mosses and springs: environmental, spatial and phylogenetic patterns of aquatic and semi-aquatic mosses*. **Bryology 2019 Conference**, 9<sup>th</sup> - 11<sup>th</sup> July 2019 Madrid (Spain). **Oral presentation**.



27. **2019 - Marcos Fernández-Martínez**, Ferran Berlosó, Jordi Corbera, Joan Garcia-Porta, Ferran Sayol, Catherine Preece, Francesc Sabater. *What do mosses tell us about the water of springs?* Barcelona, Catalonia (Spain), June 11<sup>th</sup> of 2019. 1st Iberian Symposium on the conservation of spring ecosystems. **Invited speaker, oral presentation**
26. **2019 - Fernández-Martínez, M.** *Masting as an evolutionary strategy to cope with nutrient imbalances*. 5th Annual Meeting of the Imbalance-P Project (European Research Council Synergy grant ERC-2013-SyG-610028). Sitges (Spain), 11-15 February, 2019. **Oral presentation.**
25. **2018 - Marcos Fernández-Martínez**, Ferran Berlosó, Jordi Corbera, Joan Garcia-Porta, Catherine Preece, Ferran Sayol, Francesc Sabater. *Water chemistry drives functional traits of aquatic and semi-aquatic mosses*. Session: Ecosystem and Functional Ecology. **BES Annual Meeting**, Birmingham, United Kingdom, December 17-21<sup>th</sup> of 2018. **Oral presentation.**
24. **2018 – Marcos Fernández-Martínez**, Stephan Pietsch, Josep Peñuelas & Ivan Janssens. *Exploring nonlinear dynamics of the carbon cycle*. Seminars of the Global Ecology Unit. CREAM, Bellaterra, Spain. **Oral presentation invited** by Prof. Josep Peñuelas. 2<sup>nd</sup> of July, 2018.
23. **2018 – Marcos Fernández-Martínez**, Stephan Pietsch, Josep Peñuelas & Ivan Janssens. *Exploring nonlinear dynamics of the carbon cycle*. Lunchtime seminars of the Department of Biology – University of Antwerp. PLECO, Wilrijk, Belgium. **Oral presentation invited** by Drs. Nicola Arriga and Erik Verbruggen, 14<sup>th</sup> of June, 2018.
22. **2018 - Josep Peñuelas**, Jordi Sardans, Iolanda Filella, Marc Estiarte, Joan Llusà, Romà Ogaya, Jofre Carnicer, Mireia Bartrons, Albert Rivas-Ubach, Oriol Grau, Guille Peguero, Olga Margalef, Sergi Pla-Rabés, Constantí Stefanescu, Dolores Asensio, Catherine Preece, Lei Liu, Alexandre Verger, Adrià Barbeta, Ander Achotegui-Castells, Albert Gargallo-Garriga, Dominik Sperlich, Gerard Farré-Armengol, **Marcos Fernández-Martínez**, Daijun Liu, Chao Zhang, Ifigenia Urbina, Marta Camino-Serrano, Maria Vives-Ingla, Benjamin D Stocker, Manuela Balzarolo, Rossella Guerrieri, Marc Peaucelle, Sara Marañón-Jiménez, Kevin Bórnez-Mejías, Zhaobin Mu, Adrià Descals, Alejandro Castellanos, Jaume Terradas. *Mediterranean forests under pressure by climate change*. **EGU 2018**, Vienna, Austria, April 8–13<sup>th</sup> of 2018. **Oral presentation.**
21. **2018 - Fernández-Martínez, M.** *Global trends in carbon sinks: between CO<sub>2</sub> fertilization and warming*. 4th Annual Meeting of the Imbalance-P Project (European Research Council Synergy grant ERC-2013-SyG-610028). Lommel (Belgium), 5-9 February, 2018. **Oral presentation.**
20. **2017 – Fernández-Martínez, M.**, Vicca, S., Peñuelas, J., and Janssens, I. *Increasing atmospheric CO<sub>2</sub> and temperature as the main drivers of terrestrial carbon balance*. **Ecology Across Borders: Joint Annual Meeting (BES, GFÖ, NecoV, and EEF)**, ICC Ghent, Belgium, December 11-14<sup>th</sup> of 2017. **Poster presentation.**

19. **2017 – Fernández-Martínez, M.**, Vicca, S., Janssens, I. and Peñuelas, J. *Nutrients matter most for determining spatio-temporal variability of ecosystem productivity*. CALMIT seminars, April 27<sup>th</sup> of 2017, Lincoln, Nebraska (USA). **Invited seminar, oral presentation.**

18. **2017 - Fernández-Martínez, M.** *Nutrient rich plants emit less isoprenoids and previous and future work for Imbalance-P*. 3rd Annual Meeting of the Imbalance-P Project (European Research Council Synergy grant ERC-2013-SyG-610028). Paris (France), 1-3 February, 2017. **Oral presentation.**

17. **2016 – Fernández-Martínez, M.**, Miquel Bes, Sayol, F., Calpe, M., Bagaria, G., Fraile, I., Jover, M., Preece, C., Sabater, F., Torner, G., Viza, A., and Corbera, J. English title: *Fountains and springs, highlighted habitats for bryophyte diversity conservation*. Original title: *Les fonts, un hàbitat destacat en la conservació de la biodiversitat de briòfits*. IV Jornades de conservació de flora i funga, Olot, Girona, Catalonia, Spain, 29th November 2016. **Oral presentation.**

16. **2016 – Àvila, A., and Fernández-Martínez, M.**, English title: *Climate change in Montseny: analysis of trends in temperature of air and water in La Castanya Valley during the last 3 decades*. Original title: *El canvi climàtic al Montseny: anàlisi de les tendències de variació de la temperatura de l'aire i l'aigua a la Vall de La Castanya en les darreres 3 dècades*. IX Trobada d'Estudiosos del Montseny, La Garriga, Barcelona, Catalonia, Spain, 17th November 2016. **Oral presentation.**

15. **2016 – Fernández-Martínez, M.**, Sayol, F., Bagaria, G., Fraile, I., Jover, M., Preece, C., Sabater, F., Viza, A., and Corbera, J. English title: *Project springs: on the study of bryophyte communities of the springs*. Original title: *Projecte fonts, estudi de les comunitats de briòfits de les fonts*. IX Trobada d'Estudiosos del Montseny, La Garriga, Barcelona, Catalonia, Spain, 17th November 2016. **Oral presentation.**

14. **2016 – Vicca, S., Fernández-Martínez, M.**, Peñuelas, J., Campioli, M., Janssens, I.A. *Plant carbon allocation responses to changes in nutrient availability: current empirical understanding and future directions*. Workshop – Nutrient limitation on land: how accurate are our global land models? Yangling, Shaanxi, China 15–17th June 2016. **Oral presentation.**

13. **2016 – Vicca S., Janssens I., Peñuelas J., Fernandez-Martinez M., Campioli M., Taverter O.** *Plant carbon allocation responses to changes in nutrient availability: current empirical understanding and future directions*. Workshop: Nutrient limitation on land: how accurate are our global land models? 15-17th June 2016, Yangling, Shaanxi, China. **Oral presentation.**

12. **2016 – Peñuelas, J., Canadell, J., Carnicer, J., Ciais, P., Fernández-Martínez, M.**, Janssens, I.A., Obersteiner, M., Piao, S., Sardans, J., Vautard, R., 2016. *A shift in the Anthropocene era: from CO<sub>2</sub> and N fertilization to global warming*. **EGU General Assembly 2016**, Vienna, Austria, Vienna 17–22 April 2016. **Oral presentation.**

11. **2016 - Fernández-Martínez, M.** *On the role of nutrients and climate on forest fruit production & future work within Imbalance-P.* 2nd Annual Meeting of the Imbalance-P Project (European Research Council Synergy grant ERC-2013-SyG-610028). IIASA, Laxenburg (Austria), 24-26 February, 2016. **Oral presentation.**

10. **2015 –** Peñuelas, J., Filella, I., Estiarte, M., Llusà, J., Sardans, J., Ogaya, R., Carnicer, J., Bartrons, M., Rivas, A., Grau, O., Peguero, G., Margalef, O., Asensio, D., Preece, C., Liu, L., Verger, A., Rico, L., Barbeta, A., Achotegui-Castells, A., Gargallo, A., Sperlich, D., Farré-Armengol, G., **Fernández-Martínez, M.**, Liu, D., Zhang, C., Urbina, I. 2015. **Invited final conference keynote lecture.** *Integration of molecular and global tools for a better understanding of current changes in forest structure and functioning.* X National Congress of the Italian Society of Silviculture and Forest Ecology, Sostenere il pianeta, boschi per la vita ricerca e innovazione per la tutela e la valorizzazione delle risorse. Florence, 15-18 September 2015. **Oral presentation.**

9. **2015 - Fernández-Martínez, M.** *Disentangling the role of nutrient availability and a changing climate in forest productivity.* 1st Annual Meeting of the Imbalance-P project (European Research Council Synergy grant ERC-2013-SyG-610028). Barcelona (Catalonia, Spain), 13-16 January, 2015. **Oral presentation.**

8. **2014 - Fernández-Martínez, M.**, Vicca, S., Janssens, I.A., Sardans, J., Luyssaert, S., Campioli, M., Chapin III, F.S., Ciais, P., Malhi, Y., Obersteiner, M., Papale, D., Piao, S.L., Reichstein, M., Rodà, F. & Peñuelas, J. *Nutrients matter most for global forest carbon balance.* Seminars of the Department of Ecology, University of Barcelona. 10th of October 2014, Barcelona. **Invited seminar by Dr. Jofre Carnicer, oral presentation.**

7. **2014 - Fernández-Martínez, M.**, Vicca, S., Janssens, I.A., Sardans, J., Luyssaert, S., Campioli, M., Chapin III, F.S., Ciais, P., Malhi, Y., Obersteiner, M., Papale, D., Piao, S.L., Reichstein, M., Rodà, F. & Peñuelas, J. *Nutrients matter most for global forest carbon balance.* 1st ICOS Science Conference on Greenhouse Gases and Biogeochemical Cycles 2014, 22-26 September 2014, Brussels. **Oral presentation.**

6. **2013 -** Peñuelas, J., Sardans, J., **Fernández-Martínez, M.**, Estiarte, M., Ogaya, R., Carnicer, J., Coll, M., Barbeta, A., Rivas-Ubach, A., Gargallo, A., Llusà, J., Rico, L., Achotegui, A., Farré-Armengol, G., Filella, I., Jump, A.S. *Nutrients matter most. Genomic, metabolomic and ecophysiological approaches to the study of climate change impacts on communities and ecosystems: from short term to long term responses.* Intecol 2013, 18-23 August 2013, ICC London Ex. **Oral presentation.**

5. **2012 -** Peñuelas J., Filella I., Estiarte M., Ogaya R., Llusà J., Sardans J., Jump A., Carnicer J., Rico L., Garbulsky M., Coll M., Díaz De Quijano M., Seco R., Rivas-Ubach A., Kefauver S., Barbeta A, Achoategui A, Mejia-Chang M, Gallardo A, Farre G., **Fernandez-Martínez, M.**,

Terradas J. *Ecosystemic and biospheric interactions with carbon cycle*. In Carbon dioxide budget: processes and tendencies symposium. Universitat Politècnica de Catalunya, May 23-25. **Oral presentation.**

4. **2011 - Fernández-Martínez, M.**, Belmonte, J., Espelta, J.M. *Acorn production in Mediterranean oaks: disentangling the effects of phenology, airborne pollen availability and water stress*. 12<sup>th</sup> EEf Congress, Ávila. **Poster presentation.**

3. **2011 -** Muñoz, A., Espelta, J.M., **Fernández-Martínez, M.**, Hernández, M., Peguero, G., Bonal, R. *Uncoupled seed rain phenologies of Quercus pubescens and Q. ilex enhance their successful dispersal by seed-catching rodents in mixed forests*. 12<sup>th</sup> EEf Congress, Ávila.

2. **2011 -** Muñoz, A., Espelta, J. M., Hernández, M., Bonal, R., **Fernández-Martínez, M.**, Torre, I., Llimona, F. *Uso de microchips sub-dérmicos en el seguimiento de micromamíferos. Variaciones poblacionales a corto plazo y protocolos de seguimiento a largo plazo*. Ciclo de seminarios permanentes del CENEAM 'Protocolos de seguimiento a largo plazo'. Organismo Autónomo de Parques Nacionales. 12-13 September 2011. Valsain (Segovia). **Oral presentation.**

1. **2011 - Fernández-Martínez, M.**, Belmonte, J., Espelta, J.M. *La vecería en Quercus Mediterráneos: ¿Eficiencia en la polinización o disponibilidad de recursos?* Communication at the VIII congress of ECOFLOR's working group, Toledo. **Oral presentation.**

### **Software development:**

1. 2019. **Fernández-Martínez, M.**, Maspons, J. TempCont: Temporal Contributions on Trends using Mixed Models. R package. <https://cran.r-project.org/web/packages/TempCont/index.html>

### **Grant reviews**

2. **2019** – National Science Centre, Poland: funding scheme SONATINA (Panel NZ8). One grant reviewed.

1. **2019** – Czech Science Foundation, Junior Grants – 2020. Panel: P504 - Landscape management, forestry and soil biology, ecosystem ecology. Two grants reviewed.

### **Reading committees (PhDs)**

2. **2018** – September. Eduardo Martínez García. School of Technical Agriculture and Forest Engineers (University of Castilla la Mancha), Spain.

1. **2018** – October. Teresa Valor Ivars. Forest Science and Technology Centre of Catalonia (Autonomous University of Barcelona), Spain. Acting as reserve member.

## **Workshops**

2. **2018** – **Modelling masting** workshop in Milano, Italy, 3<sup>th</sup> – 5<sup>th</sup> April 2018.

1. **2017** – **Theoretical Modeling** workshop in Paris, France, 4<sup>th</sup> February 2017.

## **Courses**

2. **2017** – **Bayesian modeling workshop with Dr. Kiona Ogle** in Paris, France, 30<sup>th</sup> – 31<sup>st</sup> January 2017.

1. **2015** – **Análisis de datos geoestadísticos utilizando el software libre R**, Universitat Autònoma de Barcelona, 2<sup>th</sup> – 5<sup>th</sup> Febrer 2015.

## **Outreach**

14. **22/05/2021** - **Marcos Fernández-Martínez**, Jordi Corbera, Catherine Preece, Francesc Sabater. *Nitrate pollution reduces biodiversity in springs*. Original title: “*La contaminació per nitrats redueix la biodiversitat fontinal*”. Seminar included in the session “*Perill, Extinció! Catalunya ha perdut un 25% de la biodiversitat en 17 anys*” from the *Setmana de la Natura* (Nature's week). Mataró, Catalonia (Spain), May 22<sup>nd</sup> of 2021. **Invited speaker, online oral presentation.**

13. **25/03/2021** – Presentation at the XVIII Jornades científiques de Mataró, participating as the invited speaker: “*Passat, present i futur del canvi climàtic i altres canvis globals*”. The presentation was broadcasted on Mataró Audiovisual: <http://mataroaudiovisual.alacarta.cat/especials-mataro/capitol/xviii-jornades-cientifiques-de-mataro>

12. **11/08/2020** – Interview with Agathe Cortes to develop a science divulgation article for El País, regarding the role of volatile organic compounds and nutrients: <https://elpais.com/ciencia/2020-08-24/el-cambio-climatico-altera-el-aroma-del-planeta.html>

11. **16/11/2019 - Marcos Fernández-Martínez**, Jordi Corbera, Joan Garcia-Porta, Ferran Sayol, Catherine Preece, Francesc Sabater. *Nitrate pollution threatens biodiversity: the case of the Catalan springs*. Original title: “*La contaminació per nitrats amenaça la biodiversitat: el cas de les fonts de Catalunya*”. Vic, Catalonia (Spain), November 16<sup>th</sup> of 2019. **Invited speaker, oral presentation.**
10. **19/03/2019 - Marcos Fernández-Martínez**. Phosphorus: constructor of ecosystems. Original title: “*El fòsfor, constructor d’ecosistemes*”. **Seminar “The sorted elements: the periodic table and its mysteries (Els elements endreçats: la taula periòdica i els seus misteris)** Mataró, Catalonia (Spain), March 19<sup>th</sup> of 2019. **Invited speaker, oral presentation.**
9. **13/09/2019** – Interview for the blog “Functional Ecologists - A blog for the people behind the research”, the official blog of Functional Ecology, a British Ecological Society journal, after I published a paper relating moss functional traits with water chemistry: <https://functionalecologists.com/2019/09/13/marcos-fernandez%E2%80%90martinez-springs-and-mosses/>
8. **10/03/2018** – Sabater, F. and **Fernández-Martínez, M.** *Comptant el temps a la natura (counting time in nature)*. Field excursion for the cycle of seminars “Tempus Fugit”. Mataró – Dosrius, 10th of March 2018. **Field trip and science outreach.**
7. **13/12/2017** – Oral interview at the annual conference of the British Ecological Society (Ecology Across Borders – Ghent) for Deutschlandfunk (German National Public Radio) and WDR (West German Public Radio) and discussing the results of our paper published in Scientific Reports (Atmospheric deposition, CO<sub>2</sub>, and change in the land carbon sink – 2017).
6. **25/03/2017** – **Fernández-Martínez, M** and Corbera, J. *Sexe i reproducció a la natura (sex and reproduction in nature)*. Field excursion for the cycle of seminars “Sexe, desenvolupament i evolució”. Vall de Fuirosos, Sant Celoni, 25th of March 2017. **Field trip and science outreach.**
5. **2017 - Fernández-Martínez, M.**, Corbera, J., Torner, G., Bagaria, G. and Sayol, F. *Les fonts del Montseny: entre amenaces i oportunitats. La Sitja del Llop* 42, 9-11.
4. **2017** – Oral interview for CLIMAX in a Colombian television channel, regarding the publication in Nature Ecology and Evolutions (*shifting from a fertilization-dominated to a warming-dominated period*) and discussing the effects of climate change.
3. **3/12/2016 – Fernández-Martínez, M.**, Miquel Bes, Sayol, F., Calpe, M., Bagaria, G., Fraile, I., Jover, M., Preece, C., Sabater, F., Torner, G., Viza, A., and Corbera, J. English title: *Is it good the water of the spring? Ask the moss!* Original title: *És bona l’aigua de la font? Pregunta-li a la molsa!* Seminars organised by Grup C3, Ciència, Cultura i Coneixement, Calldetenes, Barcelona, Catalonia, Spain, 3rd December 2016. **Invited oral presentation.**

2. **2016** – Live oral interview in Onda Vasca radio station, regarding the publication in Ecography (The North Atlantic Oscillation synchronises fruit production in western European Forests).

1. **11/04/2015** – **Fernández-Martínez, M** and Bagaria, G. Field observation of soils of the Serralada Litoral Central. Sant Martí de Montnegre, Sant Celoni. **Field trip and science outreach.**

### **Implication in research projects**

16. **2020 – 2021. Participation as Principal Investigator.** Unravelling the links between exudation, VOC emission, photosynthesis and elemental composition in bryophytes. Funder: **Bijzonder Onderzoeksfonds** (Antwerpen, Vlaanderen). Reference FFB200044. Funded: **9998 €**.

15. **2020.** Uso de herramientas de alta tecnología para el monitoreo de la biodiversidad en respuesta al cambio climático, manejo de ecosistemas y necesidades comunitarias en la Amazonía de Ecuador. AECID 2020. Investigador- colaborador: Josep Peñuelas. Budget: 15.000\$.

14. **2018 – 2021:** A glimpse into the Arctic future: equipping a unique natural experiment for next generation ecosystem research – **FutureArctic**, European Union's Horizon 2020 framework programme for research and innovation under grant agreement No 813114. FUTUREARTIC. Funding European Union's Horizon 2020 framework programme for research and innovation under grant agreement No 813114. (1/06/2018 – 30/06/2021) PI: Ivan Janssens (UA). Josep Peñuelas (PI CREAM). Budget: 4500000 euros.

13. **2018 – 2019. Participation as Principal Investigator.** Small grant of the British Ecological Society. Project: Variability of moss elemental composition in semi-natural springs. Reference SR18/1341. Funded: **£5000**.

12. **2017 – 2020.** FERT-WARM. CGL2016-79835-P: Saturación de los sumideros de Carbono: transición del periodo dominado por la fertilización de CO<sub>2</sub> y Nitrógeno a un periodo dominado por el calentamiento. Ministerio de Economía y Competitividad. CoPI: Josep Peñuelas and Jordi Sardans. Budget: 321.860 €

11. **2017 – 2019.** 2017 SGR 1005. Grup de Recerca Reconegut per la Generalitat de Catalunya 2017-2019 Grup d'Ecologia Global. (01/01/2017 – 31/12/2019). PI Josep Peñuelas. Budget: 60.216€

10. **2016 – 2018: Copernicus Climate Change Service (C3S):** Production of Essential Climate Variable Datasets based on Earth Observations – Albedo, FAPAR & LAI, European Union.
9. **2015 – 2020: Projecte Fonts** – Delegació de la Serralada Litoral Central i Institució Catalana d'Història Natural. **Principal Investigator.** Funded by the **Institute of Catalan Studies (IEC).**
8. **2014 – 2020: Participation as junior coordinator.** Synergy ERC grant SyG-2013-610028 IMBALANCE-P. Effects of phosphorus limitations on Life, Earth system and Society. European Research Council. (01/09/2014 – 31/08/2020). PI Josep Peñuelas. Budget: 13.7 millions €.
7. **2014 – 2017: NP.** CGL2013-48074-P. Impactos de la creciente desproporción ambiental entre N y P sobre organismos, comunidades y ecosistemas. Ministerio de Economía y Competitividad., (01/01/2014 – 31/12/2017). PI Josep Peñuelas and Jordi Sardans. Budget: 400.000€ (Global).
6. **2014 – 2016.** SGR2014- 274. Grup de Recerca Reconegut per la Generalitat de Catalunya 2014-2016 Grup d'Ecologia Global. (01/01/2014 – 31/12/2016). PI Josep Peñuelas. Budget: 44.000€
5. **2014 – 2015:** Long-term Global Vegetation Monitoring project (**LONGLOVE**). Funded by CNES.
4. **2011: IMPACTBOAR** project (394/2011). Organism of National Parks of the Agriculture, Food and Environment Ministry.
3. **2010 – 2013.** CGL2010-17172(BOS): Compuestos orgánicos volátiles (BVOCS) y ecología del cambio global. Ministerio de Ciencia e Innovación. (01/01/2010 – 31/12/2013). PI: Josep Peñuelas. Budget: 350.000€.
2. **2009 – 2013.** Grup d'ecofisiologia i efectes ecològics dels canvis ambientals. GRC-Grup de recerca reconegut i finançat. AGAUR-2009 SGR 458. Budget: 83.2000€
1. **2008 – 2013.** Consolidar - Ingenio Montes (CSD2008-00040): Los montes españoles y el cambio global: amenazas y oportunidades. Ministerio de Economía y Competitividad. (12/2008 – 12/2013). PI: Javier Retana Alumbroeros.

### **Organisation of international conferences**

5. **09/03/2020 – 12/03/2020: 6th IMBALANCE-P Annual Meeting** (European Research Council Synergy grant ERC-2013-SyG-610028). Laxenburg (Austria) – *online due to COVID-19. In charge of the logistics, online infrastructure and the scientific program.*



4. **11/02/2019 – 15/02/2019:** 5th IMBALANCE-P Annual Meeting (European Research Council Synergy grant ERC-2013-SyG-610028). Sitges (Spain). **Full organisation** of the meeting.
3. **05/02/2018 – 09/02/2018:** 4th IMBALANCE-P Annual Meeting (European Research Council Synergy grant ERC-2013-SyG-610028). Lommel (Belgium). **In charge of the logistics and the scientific program.**
2. **01/02/2017 – 03/02/2017:** 3rd IMBALANCE-P Annual Meeting (European Research Council Synergy grant ERC-2013-SyG-610028). Paris (France). **In charge of the logistics and the scientific program.**
1. **24/02/2016 – 26/02/2016:** 2nd IMBALANCE-P Annual Meeting (European Research Council Synergy grant ERC-2013-SyG-610028). Vienna (Austria). **In charge of the logistics and the scientific program.**

### **Editorial boards**

3. Since 2021 – Topic Editor of **Plants**: [https://www.mdpi.com/journal/plants/topic\\_editors](https://www.mdpi.com/journal/plants/topic_editors)
2. Since 2020 – Review Editor of **Frontiers in Ecology and Evolution**: <https://www.frontiersin.org/journals/ecology-and-evolution/sections/models-in-ecology-and-evolution#editorial-board>
1. Since 2013 – Member of the **editorial board of the journal of science divulgation l'Atzavara**: <https://www.raco.cat/index.php/Atzavara>

### **Memberships of scientific societies, research groups and institutional responsibilities**

9. Since 2020 – PhD advisory board at CREAF.
8. Since 2020 – Membership of the **European Geophysical Union**.
7. Since 2017 – Membership of the **British Ecological Society**, London, UK.
6. Since 2017 – **Centre of Excellence GCE (Global Change Ecology)**, University of Antwerp, BE.
5. Since 2017 – **Research group PLECO (Plants and Ecosystems)**, University of Antwerp, BE.
4. Since 2015 – Membership of the **Catalan Institution of Natural History**, Barcelona, Spain.

3. 2014 – 2020: **ERC Synergy Grant Consortium IMBALANCE-P** – Effects of phosphorus limitations on Life, Earth system and Society (acting as **junior coordinator**).
2. 2013 – 2017: Member of the **Global Ecology Unit**, CREAF-CSIC, Spain. Now collaborator.
1. Since 2013 – Member of the **Delegation of the Central Littoral Mountain Range** of the Catalan Institution of Natural History (previously, Science Section of the Museum of Mataró), Mataró, Spain.