Guido Kraemer

Professional Experience

2019–present **Wissenschaftlicher Mitarbeiter**, *Geography–Uni Leipzig*, Germany.

2006–2013 **Guiding travel groups**, *Independent*, Peru.

Education

2015–2019 **PhD**, *Max Planck Institute for Biogeochemisty/Universitat de València.*
Remote Sensing; `www.bgc-jena.mpg.de/~gkraemer`

2013–2015 **M.Sc.**, *Friedrich-Schiller-Universität*, Jena.
Ecology, Evolution, and Systematics

2008–2012 **B.Sc./Ing.**, *Universidad Nacional de la Amazonía Peruana*, Iquitos.
Ecología de Bósques Tropicales

2005–2008 **No degree**, *Ludwig-Maximilians-Universität*, München.
Mathematics

Teaching

Feb 2018 **NERC Big Data Course**, *Department for Continuing Education*, Oxford.
`https://www.conted.ox.ac.uk/events/view/big-data-in-environmental-biology`

January 2018 **Advances Statistics & Data Analysis**, *Max Planck Institute for Biogeochemistry*, Jena.

May 2017 **R Course: The Basics**, *Max Planck Institute for Biogeochemistry*, Jena.

April 2016 **R Course: The Basics**, *Max Planck Institute for Biogeochemistry*, Jena.

August 2017 **Exploring the Earth system with data and models**, *Summer Akademy NAka*, Papenburg.
`https://jgw-ev.de/nachhaltigkeitsakademie/naka-2017/kurs-1-daten-modelle/`

Language

German native

English C2 *Science*

Spanish C2 *Studies in Peru*

Computer Skills

OS	Linux, Windows	Office	LaTeX, MS Office, Libre Office
Programming	High Performance R, Julia, Python, C, Typescript	Computing	HPC Cluster Environment, Blockchain, Docker

Software

dimRed	Dimensionality Reduction in R, `https://github.com/gdkrmr/dimRed`
coRanking	The CoRanking matrix in R, `https://github.com/gdkrmr/coRanking`
DRR	Dimensionality Reduction via Regression in R, `https://github.com/gdkrmr/DRR`
WeightedOnlineStats.jl	Statistics for big data with $\mathcal{O}(1)$ memory in pure Julia, `https://github.com/gdkrmr/WeightedOnlineStats.jl`
BTCParser.jl	Parsing the Bitcoin blockchain in pure Julia, `https://github.com/gdkrmr/BTCParser.jl`
LevelDB.jl	LevelDB wrapper for Julia, `https://github.com/gdkrmr/LevelDB.jl`
Ripemd.jl	Ripemd hashing in pure Julia, `https://github.com/gdkrmr/Ripemd.jl`
Base58.jl	Base58 encoding in pure Julia, `https://github.com/gdkrmr/Base58.jl`

References

Dr. Miguel Mahecha	Leader of the research group *Empirical Inference of the Earth System* at Max Planck Institute for Biogeochemistry, Jena. mmahecha@bgc-jena.mpg.de
Prof. Markus Reichstein	Director of the department for *Biogeochemical Integration* of the Max Planck Institute for Biogeochemistry, Jena. mreichstein@bgc-jena.mpg.de
Prof. Gustau Camps-Valls	Professor at *Image Processing Lab*, Universitat de València. gustau.camps@uv.es

Awards

2019 Human Development Challenge	Special mention "for highly-complex visualization of 621 variables from the World Development Indicators (WDI) database" `https://www.bgc-jena.mpg.de/~gkraemer/hdi_vis`

Publications

[1] Guido Kraemer, Markus Reichstein, Gustau Camps-Valls, Jeroen Smits, and Miguel D. Mahecha. "The Low Dimensionality of Development". In: *Social Indicators Research* (May 2020). ISSN: 1573-0921. DOI: 10.1007/s11205-020-02349-0.

[2] Guido Kraemer, Gustau Camps-Valls, Markus Reichstein, and Miguel D. Mahecha. “Summarizing the State of the Terrestrial Biosphere in Few Dimensions”. In: *Biogeosciences* 17.9 (May 2020), pp. 2397–2424. ISSN: 1726-4170. DOI: 10.5194/bg-17-2397-2020.

[3] Miguel D. Mahecha, Fabian Gans, Gunnar Brandt, Rune Christiansen, Sarah E. Cornell, Normann Fomferra, Guido Kraemer, Jonas Peters, Paul Bodesheim, Gustau Camps-Valls, Jonathan F. Donges, Wouter Dorigo, Lina M. Estupinan-Suarez, Victor H. Gutierrez-Velez, Martin Gutwin, Martin Jung, Maria C. Londoño, Diego G. Miralles, Phillip Papastefanou, and Markus Reichstein. “Earth System Data Cubes Unravel Global Multivariate Dynamics”. In: *Earth System Dynamics* 11.1 (Feb. 2020), pp. 201–234. ISSN: 2190-4979. DOI: 10.5194/esd-11-201-2020.

[4] G. Kraemer, M. Reichstein, and M. D. Mahecha. “dimRed and coRanking – Unifying Dimensionality Reduction in R”. In: *The R Journal* 10.1 (2018), pp. 342–358. DOI: 10.32614/RJ-2018-039.

[5] C. A. Sierra, M. Mahecha, G. Poveda, E. Álvarez-Dávila, V. H. Gutierrez-Velez, B. Reu, H. Feilhauer, J. Anáya, D. Armenteras, A. M. Benavides, C. Buendia, Á. Duque, L. M. Estupiñan-Suarez, C. González, S. Gonzalez-Caro, R. Jimenez, G. Kraemer, M. C. Londoño, S. A. Orrego, J. M. Posada, D. Ruiz-Carrascal, and S. Skowronek. “Monitoring Ecological Change during Rapid Socio-Economic and Political Transitions: Colombian Ecosystems in the Post-Conflict Era”. In: *Environmental Science & Policy* 76 (2017), pp. 40–49. DOI: 10.1016/j.envsci.2017.06.011.

[6] J. Muhr, A. Angert, R. I. Negrón-Juárez, W. A. Muñoz, G. Kraemer, J. Q. Chambers, and S. E. Trumbore. “Carbon Dioxide Emitted from Live Stems of Tropical Trees Is Several Years Old”. In: *Tree Physiology* 33.7 (Jan. 2013), pp. 743–752. DOI: 10.1093/treephys/tpt049.

[7] J. Angert A. Muhr, R. Negron Juarez, W. Alegria Muñoz, G. Kraemer, J. Ramirez Santillan, J. Q. Chambers, and S. E. Trumbore. “The Contribution of Respiration in Tree Stems to the Dole Effect”. In: *Biogeosciences* 9.10 (Oct. 2012), pp. 4037–4044. DOI: 10.5194/bg-9-4037-2012.

[8] A. Angert, J. Muhr, R. Negron Juarez, W. Alegria Muñoz, G. Kraemer, J. Ramirez Santillan, E. Barkan, S. Mazeh, J. Q. Chambers, and S. E. Trumbore. “Internal Respiration of Amazon Tree Stems Greatly Exceeds External CO2 Efflux”. In: *Biogeosciences* 9.12 (Dec. 2012), pp. 4979–4991. DOI: 10.5194/bg-9-4979-2012.