

Lebenslauf

Prof. Dr. Markus Reichstein

Geboren: 25.09.1972 in Kiel

Familienstand: verheiratet, 4 Kinder

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Forschungsinteressen

Erdsystemwissenschaft, Globale Biogeochemische Kreisläufe, Böden im Erdsystem, Systemische Risiken, Klimaextreme und deren Auswirkungen auf Ökosysteme und Gesellschaften, Anwendung künstlicher Intelligenz/maschinenellen Lernens auf raumzeitliche Dynamik und für Frühwarnung

Wissenschaftlicher und beruflicher Werdegang

- 10/2022- Amazon Scholar (AWS AIRE DeepEarth, A. Smola/ M. Li)
- 01/2022- Gründungsdirektor ELLIS Unit Jena
- 2021 (Jan/Feb) Gastprofessor an der Universität Innsbruck, Österreich.
- 2014- Gründungsdirektor am Michael-Stifel-Center Jena for Data-driven and Simulation Science, Friedrich-Schiller-Universität Jena (Wiederwahl 2018).
- 07/2014- Professor für Globale Geoökologie, Friedrich-Schiller-Universität Jena.
- 2014- Geschäftsführender Direktor MPI für Biogeochemie, Jena (rotierend)
- 07/2012- Direktor Abteilung Biogeochemische Integration, Max-Planck-Institut für Biogeochemie, Jena.
- 2006-2012 Max Planck Forschungsgruppenleiter am Max-Planck-Institut für Biogeochemie, Jena, Gruppe Biogeochemische Modell-Daten-Integration.
- 2004–2006 EU-Marie-Curie Research Fellow am Forest Ecology Lab, Department of Forest Science and Environment, Universität Tuscia, Italien.
- 2001–2003 Wissenschaftlicher Mitarbeiter, Lehre und interne Koordination der Gruppe Terrestrial Process Integration, Abteilung Pflanzenökologie, Universität Bayreuth
- 1998–2001 Wissenschaftlicher Mitarbeiter, Abteilung Pflanzenökologie Universität Bayreuth
- 1998–2001 Doktorand; Doktorarbeit: *'Drought effects on ecosystem carbon and water exchange in three Mediterranean forest ecosystems – a combined top-down and bottom-up analysis'* (summa cum laude), Universität Bayreuth.
- 1992–1998 Diplom-Landschaftsökologie, Institut für Landschaftsökologie Universität Münster; Diplomarbeit: *'Microbial biomass and carbon mineralisation in the alpine forest-tundra ecotone at Stillberg (Davos, Schweiz)'* (mit Auszeichnung).

Preise und Auszeichnungen

2020	Gottfried Wilhelm Leibniz Preis 2020
2019-	ERC Synergy Grant USMILE, Understanding and Modelling the Earth System with Machine Learning
2018	Preisträger des Jahres 2018 für den Piers J. Sellers Mid-Career Award der Amerikanischen Geophysikalischen Vereinigung (AGU), Sektion Globale Umweltveränderungen
2014-2023	Highly cited researcher in Geowissenschaften 2017-2023, Umweltwissenschaften 2014-2021, ebenso 2016 und 2018 in Agrarwissenschaften, Thomson Reuters, USA/Canada
2013	Max-Planck-Forschungspreis der Alexander von Humboldt-Stiftung und der Max-Planck-Gesellschaft
2010	Jim Gray (Microsoft) Seed Award für hervorragende Leistungen im Bereich E-Science
2009	Essential Science Indicators “Hot paper” (von Sciencewatch) für Moffat, Papale, Reichstein et al., 2007
2008	ERC Starting Grant QUASOM
2008	“Rising star in Environment & Ecology” (Classified by essential science indicators - Sciencewatch)
2005, 2007, 2008	CARBOEUROPE Preis <i>best young scientist paper award</i> für (1) Reichstein et al. (2005), Glob.Ch. Biol. 11, 1424-1439 (2) Owen, Tenhunen, Reichstein et al. (2007), Glob. Ch. Biol. 13:734-760 (3) Wutzler and Reichstein (2008), Biogeosciences 5:749-759.
2005	Marie-Curie Intra-European Forschungsstipendium INTERMODE

Leitungs- und Beratungstätigkeiten

2024-	Vorstandsmitglied Deutsches Klima-Konsortium e.V. (DKK)
2022-	Mitglied des Auswahlausschusses zur Vergabe der Alexander von Humboldt -Professur
2021-2024	Leitung Lenkungsausschuss <i>Knowledge Action Network on Emergent Risks and Extreme Events</i> (Future Earth, IRDR, WCRP und WWRP Initiative)
2020-	Mitglied des Strategie-Beirates für den Forschungsbereich Erde und Umwelt der Helmholtz-Gemeinschaft
2020-	Mitglied wissenschaftliches Beratergremium Exzellenzcluster „Machine Learning: New Perspectives for Science“, Universität Tübingen
2020-	Mitglied des wissenschaftlichen Beratergremiums Helmholtz Artificial Intelligence Cooperation Unit (HAICU)
2019-	Co-Sprecher Nationale Forschungsdateninfrastrukturen (NFDI4Earth)
2019-	Mitglied der Landeswissenschaftskonferenz des Landes Thüringen
2019-	Mitglied des Deutschen Komitees für Nachhaltigkeitsforschung in Future Earth
2018-2021	Leitung Steuerungsteam <i>Knowledge Action Network on Emergent Risks and Extreme Events</i> (Future Earth, IRDR, WCRP und WWRP Initiative)
2018	Gründungsmitglied des Interim-Steuerungsteams WRCP-IRDR-Future Earth Knowledge Action Network on Extreme Events and Emergent Risks

2017-2019	Sprecher der DFG-Future-Earth Arbeitsgruppe Gesellschaftliche Resilienz und Klimaextreme
2016-2020	Sprecher in iDIV für die Institute der Max-Planck-Gesellschaft
2016-2020	Mitglied des wissenschaftlichen Beratergremiums für ICOS (Integrated Carbon Observation System)
2015-2019	Koordinator H2020 Projekt BACI: Detecting changes in essential ecosystem and biodiversity properties – towards a Biosphere Atmosphere Change Index (zusammen mit MPI-BGC Gruppenleiter Dr. Miguel Mahecha)
2014-	Experte am Ständigen Schiedshof für Streitigkeiten in Bezug auf Fragen der natürlichen Lebensgrundlagen und der Umwelt, Den Haag, Niederlande. (Verlängerung in 2020)
2014-	Mitglied des Klimarates des Landes Thüringen
2014-2016	Wissenschaftliche Leitung der Future Earth Cluster Initiative Extreme Events and Environments from climate to Society (E ³ S)
2012	Hauptautor des IPCC-Sonderberichts über Klimaextreme (SREX), WG I.
2009-2013	Koordinator EU FP7 Projekt CARBO-Extreme
2008-2014	Mitglied des wissenschaftlichen Beratergremiums von iLEAPS/IGBP
2007-2015	Mitglied des wissenschaftlichen Beratergremiums von FLUXNET Synthesis

Mitglied Redaktionsgremien

One Earth (2019-), Global Sustainability (2018-2023), Agricultural and Forest Meteorology, Global Change Biology (2008–2018), Carbon Management (2010-2018), Journal of Geophysical Research – Machine Learning and Computation (2023-)

Organisation von wissenschaftlichen Tagungen

2005-	Ausrichtung von AGU- und EGU-Veranstaltungen zu Kohlenstoffkreislauf, Extremereignissen, Systemische Risiken, Gesellschaftliche Resilienz, Öko-Hydrologie, Fernerkundungsanwendungen, Böden, Klimainformatik.
2007-	Ausrichtung zahlreicher internationaler Workshops im Rahmen von FLUXNET, E ³ S, EU FP6, FP7 und H2020 Projekten.

Aktuell geförderte Projekte (Auswahl)

AI4PEX, (2024-2027), ELIAS (2023-), ELLIS Unit Jena *Machine Learning for Earth and Climate Sciences* (2021-2026) incl. CZS Junior Research Group (2022-2027); Open Earth Monitor (2022-2026), HK2023 VolkswagenStiftung: *Herrenhausen Conference Climate crisis and systemic risks: Lessons Learned from Covid-19* (2022-2024), H2020 *Myriad-EU* (2021-2025), H2020 *XAIDA* (2021-2025), DFG *NFDI4Earth* (2021-2026), H2020 *USMILE* (2020-2026); DLR *Project Office BIOMASS* (2020-2024); DFG center iDIV: *German Centre for Integrative Biodiversity Research Halle-Jena-Leipzig*; PI, since 2013.

Abgeschlossene Projektförderungen (Auswahl)

H2020 *DeepCube* (2021-2023), DLR Project *DUKE* (2022-2023), DFG *SUBSOM* (2017-2021); VolkswagenStiftung: *Herrenhausen Conference Extreme Events – building climate resilient societies*, scientific lead (2018-2021); ESA *Land Surface Temperature CCI project* (2018-2021); DFG *SUBSOM The forgotten part of carbon cycling: Organic matter storage and turnover in subsoils* co-PI (2017-2021); DKN Future Earth Working Group *Societal resilience*

and climate extremes (2017-2019); EU H2020 *Detecting changes in essential ecosystem and biodiversity properties – towards a Biosphere Atmosphere Change Index: BACI* (2015-2019); ESA *GlobBiomass*; PI 2015-2019; NIBIO MOCABORS: *Moisture dynamics and carbon sequestration in boreal soils* PI since (2017-2019).

Betreuung von Doktorarbeiten (Auswahl)

Benson (aktuell) *Deep learning and hybrid modeling of global vegetation and hydrology*.

El Ghawi (aktuell) *Hybrid machine-learning based modelling of biosphere-atmosphere interactions*.

Kariyathan (aktuell) *Biogeochemical insights from multi-tracer atmospheric flask data*.

Linscheid (aktuell) *Ecological process understanding across time scales*.

Pallandt-Vermeulen (aktuell) *Modelling the role of soil moisture dynamics on soil organic matter decomposition*.

Paulus (aktuell) *Land - atmosphere interactions in seasonally dry systems using lysimeter data*.

Upton (aktuell) *Machine-learning based estimation of ecosystem CO₂ fluxes constrained by atmospheric and ecosystem observations*.

Cortés (2024) *Novel approaches to spatio-temporal trend detection in environmental data*. Dissertation, Friedrich Schiller University Jena.

Denissen (2022) *Mapping terrestrial evaporation regimes – a data-driven analysis of land-atmosphere interactions under climate change*

Kraft (2022) *Deep learning and hybrid modeling of global vegetation and hydrology*.

Trautmann (2022) *Understanding global water storage variations using model-data integration*.

Ahrens (2021) *Reconciling turnover models of roots and soil organic carbon with radiocarbon measurements*. Gottfried Wilhelm Leibniz Universität, Hannover.

Nelson (2021) *Ecosystem Transpiration from Eddy Covariance*. Friedrich-Schiller-Universität, Jena

Krämer (2020) *Developing an Earth System State Indicator*, University of Valencia, Spain.

Boese (2018) *Semi-Empirical Water-Use Efficiency Models from Local to Global Scale*. Friedrich-Schiller-Universität, Jena.

Knauer (2018) *Integrating observations and models to understand ecophysiological controls on terrestrial water-carbon coupling*. Universität Freiburg.

Forkel (2015) *Controls on Global Greening, Phenology and the Enhanced Seasonal CO₂ Amplitude: Integrating Decadal Satellite Observations and Global Ecosystem Models*, Friedrich-Schiller-Universität, Chemisch-Geowissenschaftliche Fakultät, Jena, (Bernd Rendel Prize).

Braakhekke (2014) *Mechanistic modelling of the vertical soil organic matter profile*, Univ., Wageningen.

Zscheischler (2014) *A global analysis of extreme events and consequences for the terrestrial carbon cycle*, Eidgenössische Technische Hochschule, Institut für Atmosphäre und Klima, Zürich (Otto-Hahn Medal 2015, and Wladimir-Köppen Prize 2016).

Görner (2011) *Improving data-oriented light use efficiency models of gross primary productivity with remotely sensed spectral indices*, Friedrich-Schiller-Universität, Jena.

Carvalhais (2010) *Iberian Peninsula ecosystem carbon fluxes; a model-data integration study*; Dissertação, Univ. Lisboa.

Lasslop (2010) *Model-data fusion for terrestrial biogeochemical models with carbon and water cycle observations*, Univ. Hamburg.

Mahecha (2009) *Ecosystem-atmosphere exchanges on multiple time scales*, Zürich ETH, Zürich (ETH Medal).

Betreuung von Master-, Diplom- und Bachelor Arbeiten (Auswahl)

- Thomas (2012) *Reproducing FAPAR dynamics of Africa, based on climate, land use, and soil data using random forest*, Friedrich-Schiller-Universität, Diplom-Geographie, Jena.
- Ahrens (2011) *Constraining a simple soil organic carbon model with 14C data*, Univ., Bayreuth.
- Angermüller (2009) *Influence of driving forces and ecosystem parameters on carbon uptake from weekly to interannual time scales*, Diplom-Geoökologie, Univ., Bayreuth.
- Fürst (2009) *Characterizing global spatiotemporal patterns of the fraction of absorbed photosynthetically active radiation*, Diplom-Geoökologie, Univ., Bayreuth.
- Milbradt (2008) *Exploration von MODIS-Zeitreihen zur Veränderungsanalyse im Zeitraum 2000-2007 am Beispiel des Land Surface Temperature Emissivity Produktes*. Friedrich-Schiller-Universität, Diplom-Geographie, Jena.
- Kuglitsch (2007) *Determinanten der Wassernutzungseffizienz in Europa und deren Veränderung bei verschiedenen Klimaszenarien*, Diplom-Geographie, Univ., Wien.
- Vollrath (2007) *Die Analyse der Vegetationsproduktivität im Krüger Nationalpark, Südafrika anhand von Eddy-Kovarianz- und Fernerkundungsdaten*. Friedrich-Schiller-Universität, Bsc Geographie, Jena.

Lehre (ausgewählte Kurse)

- 2021 Kurs "Modell-Daten-Integration für Naturwissenschaften", Universität Innsbruck, Österreich.
- 2012- Integration of Remote Sensing, in-situ observation and modelling, Friedrich-Schiller Universität Jena.
- 2011- Applied statistics & data analysis, Overview course on Global Biogeochemical Cycles: Global Water Cycle; IMPRS Global Biogeochemical Cycles; MPI-BGC/FSU-Jena.
- 2006- Integration von Fernerkundung, Ökosystembeobachtung und Ökosystemmodellierung (Vorlesung, Seminar und Übung; Master Studiengang Geoinformatik); Friedrich-Schiller-Universität Jena.
- 2002 EDV für Biologen (Universität Bayreuth).
- 2001-2004 Ökologisches Feldpraktikum für Biologen und Geoökologen (Universität Bayreuth).
- 2001-2003 Ökophysiologische Modellierung, regionale ökologische Exkursionen für Geoökologen und Biologen (Universität Bayreuth).

Full publication list Markus Reichstein (without EGU/AGU conference abstracts)

Peer reviewed journals (incl. papers in discussion in peer reviewed journals and conferences)

2024

- Benson, Vitus, Claire Robin, Christian Requena-Mesa, Lazaro Alonso, Nuno Carvalhais, José Cortés, Zhihan Gao, Nora Linscheid, Mélanie Weynants, and **Markus Reichstein**. "Multi-modal Learning for Geospatial Vegetation Forecasting." In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition, pp. 27788-27799. 2024.
- Bogdanovich, E., Brenning, A., **Reichstein, M.**, DePolt, K., Guenther, L., Frank, D., and Orth, R.: Official heat warnings miss situations with a detectable societal heat response in European countries International Journal of Disaster Risk Reduction 100, 10.1016/j.ijdr.2023.104206, 2024.
- Cohrs, K.-H., Varando, G., Camps-Valls, G., Carvalhais, N., and **Reichstein, M.**: Double machine learning for causal hybrid modeling - applications in the earth sciences, 10.48550/arXiv.2402.13332, 2024.
- Estupinan-Suarez, L. M., Mahecha, M. D., Brenning, A., Kraemer, G., Poveda, G., **Reichstein, M.**, and Sierra, C.: Spatial patterns of vegetation activity related to ENSO in Northern South America, Journal of Geophysical Research: Biogeosciences, 129, 10.1029/2022jg007344, 2024.
- Han, B., Zhang, S., Shi, X., and **Reichstein, M.**: Bridging remote sensors with multisensor geospatial foundation models, 10.48550/arXiv.2404.01260, 2024.
- Jung, M., Nelson, J. A., Migliavacca, M., El-Madany, T. S., Papale, D., **Reichstein, M.**, Walther, S., and Wutzler, T.: Technical note: Flagging inconsistencies in flux tower data, Biogeosciences, 21, 1827 - 1846, 10.5194/bg-21-1827-2024, 2024.
- Liu, G., Migliavacca, M., Reimers, C., Kraft, B., **Reichstein, M.**, Richardson, A., Wingate, L., Delpierre, N., Yang, H., and Winkler, A.: DeepPhenoMem V1.0: Deep learning modelling of canopy greenness dynamics accounting for multi-variate meteorological memory effects on vegetation phenology, 10.5194/egusphere-2024-464, 2024.
- Nelson, J. A., Walther, S., Gans, F., Kraft, B., Weber, U., Novick, K., Buchmann, N., Migliavacca, M., Wohlfahrt, G., Šigut, L., Ibrom, A., Papale, D., Göckede, M., Duveiller, G., Knohl, A., Hörtnagl, L., Scott, R. L., Zhang, W., Hamdi, Z. M., **Reichstein, M.**, Aranda-Barranco, S., Ardö, J., de Beeck, M. O., Billdesbach, D., Bowling, D., Bracho, R., Brümmner, C., Camps-Valls, G., Chen, S., Cleverly, J. R., Desai, A., Dong, G., El-Madany, T. S., Euskirchen, E. S., Feigenwinter, I., Galvagno, M., Gerosa, G., Gielen, B., Goded, I., Goslee, S., Gough, C. M., Heinesch, B., Ichii, K., Jackowicz-Korczynski, M. A., Klosterhalfen, A., Knox, S., Kobayashi, H., Kohonen, K.-M., Korkiakoski, M., Mammarella, I., Mana, G., Marzuoli, R., Matamala, R., Metzger, S., Montagnani, L., Nicolini, G., O'Halloran, T., Ourcival, J.-M., Peichl, M., Pendall, E., Reverter, B. R., Roland, M., Sabbatini, S., Sachs, T., Schmidt, M., Schwalm, C. R., Shekhar, A., Silberstein, R., Silveira, M. L., Spano, D., Tagesson, T., Tramontana, G., Trotta, C., Turco, F., Vesala, T., Vincke, C., Vitale, D., Vivoni, E. R., Wang, Y., Woodgate, W., Yopez, E. A., Zhang, J., Zona, D., and Jung, M.: X-BASE: the first terrestrial carbon and water flux products from an extended data-driven scaling framework, FLUXCOM-X, 10.5194/egusphere-2024-165, 2024.
- Paulus, S., Orth, R., Lee, S.-C., Hildebrandt, A., Jung, M., Nelson, J. A., El-Madany, T. S., Carrara, A., Moreno, G., Mauder, M., Groh, J., Graf, A., **Reichstein, M.**, and Migliavacca, M.: Interpretability of negative latent heat fluxes from eddy covariance measurements in dry conditions. Biogeosciences 21 (8), pp. 2051 – 2085, 10.5194/bg-21-2051-2024, 2024.
- Poehls, J., Silva, L. A., Koirala, S., Carvalhais, N., and **Reichstein, M.**: Downscaling soil moisture to sub-km resolutions with simple machine learning ensembles, 10.2139/ssrn.4743411, 2024.
- Reichstein, M.**, Benson, V., Camps-Valls, G., Boran, H., Fearnley, C., Kornhuber, K., Rahaman, N., Schöllkopf, B., Tárraga, J. M., Vinuesa, R., Blunk, J., Dall, K., Denzler, J., Frank, D., Martini, G., Nganga, N., and Robinson, D. M.: Early warning of complex climate risk with integrated artificial intelligence2693-5015, 10.21203/rs.3.rs-4248340/v1, 2024.
- Stevens, B., Adami, S., Ali, T., Anzt, H., Aslan, Z., Attinger, S., Bäck, J., Baehr, J., Bauer, P., Bernier, N., Bishop, B., Bockelmann, H., Bony, S., Brasseur, G., Bresch, D. N., Breyer, S., Brunet, G., Buttigieg, P. L., Cao, J., Castet, C., Cheng, Y., Dey Choudhury, A., Coen, D., Crewell, S., Dabholkar, A., Dai, Q., Doblas-Reyes, F., Durran, D., El Gaidi, A., Ewen, C., Exarchou, E., Eyring, V., Falkenhoff, F., Farrell, D., Forster, P. M., Frassoni, A., Frauen, C., Fuhrer, O., Gani, S., Gerber, E., Goldfarb, D., Grieger, J., Gruber, N., Hazeleger, W., Herken, R., Hewitt, C., Hoefler, T., Hsu, H.-H., Jacob, D., Jahn, A., Jakob, C., Jung, T., Kadow, C., Kang, I.-S., Kang, S., Kashinath, K., Kleinen-von Königslöw, K., Klocke, D., Kloenne, U., Klöwer, M., Kodama, C.,

- Kollet, S., Kölling, T., Kontkanen, J., Kopp, S., Koran, M., Kulmala, M., Lappalainen, H., Latifi, F., Lawrence, B., Lee, J. Y., Lejeun, Q., Lessig, C., Li, C., Lippert, T., Luterbacher, J., Manninen, P., Marotzke, J., Matsouka, S., Merchant, C., Messmer, P., Michel, G., Michielsen, K., Miyakawa, T., Müller, J., Munir, R., Narayanasetti, S., Ndiaye, O., Nobre, C., Oberg, A., Oki, R., Özkan-Haller, T., Palmer, T., Posey, S., Prein, A., Primus, O., Pritchard, M., Pullen, J., Putrasahan, D., Quaas, J., Raghavan, K., Ramaswamy, V., Rapp, M., Rauser, F., **Reichstein, M.**, Revi, A., Saluja, S., Satoh, M., Schemann, V., Schemm, S., Schnadt Poberaj, C., Schulthess, T., Senior, C., Shukla, J., Singh, M., Slingo, J., Sobel, A., Solman, S., Spitzer, J., Stier, P., Stocker, T., Strock, S., Su, H., Taalas, P., Taylor, J., Tegtmeier, S., Teutsch, G., Tompkins, A., Ulbrich, U., Vidale, P.-L., Wu, C.-M., Xu, H., Zaki, N., Zanna, L., Zhou, T., and Ziemer, F.: Earth Virtualization Engines (EVE), *Earth System Science Data*, 16, 2113 - 2122, 10.5194/essd-16-2113-2024, 2024.
- Tao, F., Houlton, B. Z., Frey, S. D., Lehmann, J., Manzoni, S., Huang, Y., Jiang, L., Mishra, U., Hungate, B. A., Schmidt, M. W. I., **Reichstein, M.**, Carvalhais, N., Ciais, P., Wang, Y.-P., Ahrens, B., Hugelius, G., Hocking, T. D., Lu, X., Shi, Z., Viatkin, K., Vargas, R., Yigini, Y., Omuto, C., Malik, A. A., Peralta, G., Cuevas-Corona, R., Paolo, L. E. D., Luotto, I., Liao, C., Liang, Y.-S., Saynes, V. S., Huang, X., and Luo, Y.: Reply to: Contribution of carbon inputs to soil carbon accumulation cannot be neglected, *Nature* 627, pp. E4 - E6. 10.1101/2023.08.20.552557, 2024.
- Upton, S., **Reichstein, M.**, Gans, F., Peters, W., Kraft, B., and Bastos, A.: Constraining biospheric carbon dioxide fluxes by combined top-down and bottom-up approaches, *Atmospheric Chemistry and Physics* 24 (4), pp. 2555 – 2582, 10.5194/acp-24-2555-2024, 2024..
- Wang, S.; Yang, H.; Koirala, S.; Forkel, M.; **Reichstein, M.**; Carvalhais, N.: Understanding disturbance regimes from patterns in modeled forest biomass. *Journal of Advances in Modeling Earth Systems* 16 (6), e2023MS004099, 10.1029/2023MS004099, 2024.
- Zhan, C., Orth, R., Yang, H., **Reichstein, M.**, Zaehle, S., De Kauwe, M. G., Rammig, A., and Winkler, A.: Estimating the CO₂ fertilization effect on extratropical forest productivity from Flux-tower observations. *Journal of Geophysical Research: Biogeosciences* 129 (6), e2023JG007910, 2024.
- Zhang, W., Nelson, J. A., Miralles, D. G., Mauder, M., Migliavacca, M., Poyatos, R., **Reichstein, M.**, and Jung, M.: A new post-hoc method to reduce the energy imbalance in eddy covariance measurements, *Geophys Res Lett*, 51, 10.1029/2023gl107084, 2024.

2023

- Bastos, A., Sippel, S., Frank, D., Mahecha, M. D., Zaehle, S., Zscheischler, J., and **Reichstein, M.**: A joint framework for studying compound ecoclimatic events, *Nature Reviews Earth & Environment*, 10.1038/s43017-023-00410-3, 2023.
- Benson, V., Requena Mesa, C., Robin, C., Alonso, L., Cortes, J., Gao, Z., Linscheid, N., Weynants, M., and **Reichstein, M.**: Forecasting localized weather impacts on vegetation as seen from space with meteo-guided video prediction, 10.48550/arXiv.2303.16198, 2023.
- Bogdanovich, E., Guenther, L., **Reichstein, M.**, Frank, D., Ruhmann, G., Brenning, A., Denissen, J. M. C., and Orth, R.: Societal attention to heat waves can indicate public health impacts, *Weather, Climate, and Society*, 15, 557 - 569, 10.1175/wcas-d-22-0147.1, 2023.
- DePolt, K., Ward, P. J., de Ruiter, M., Bogdanovich, E., **Reichstein, M.**, Frank, D., and Orth, R.: Quantifying impact-relevant heatwave durations, 10.22541/essoar.168500314.44289092/v1, 2023.
- EIGHawi, R.; Kraft, B.; Reimers, C.; **Reichstein, M.**; Körner, M.; Gentine, P.; Winkler, A. J., 2023. Hybrid modeling of evapotranspiration: inferring stomatal and aerodynamic resistances using combined physics-based and machine learning. *Environmental Research* 18, 034039. <https://iopscience.iop.org/article/10.1088/1748-9326/acbbe0>
- Garcia-Garcia, A., Cuesta-Valero, F. J., Miralles, D. G., Mahecha, M. D., Quaas, J., **Reichstein, M.**, Zscheischler, J., and Peng, J.: Soil heat extremes can outpace air temperature extremes. *Nat. Clim. Chang.* **13**, 1237–1241 (2023). <https://doi.org/10.1038/s41558-023-01812-3>, 2023.
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