

# GERICS Publications (peer reviewed)

2023

Abel A., Ziegler A., Gbod I.E., **Weber T.**, Ajayi V.O., Traoré S.B., Paeth H. (2023): Robustness of climate indices relevant for agriculture in Africa deduced from GCMs and RCMs against reanalysis and gridded observations. *Climate Dynamics*, 62, 1077-1106, DOI: 10.1007/s00382-023-06956-8

**Asmus C., Hoffmann P., Pietikäinen J.P.**, Böhner J., **Rechid D.** (2023): Modeling and evaluating the effects of irrigation on land atmosphere interaction in South-West Europe with the regional climate model REMO iMOVE using a newly developed parameterization. *Geoscientific Model Development*, 16(24), 7311-7337, DOI: 10.5194/gmd-16-7311-2023

Atienza Casas S., Calicis C., Candiago S., Dendoncker N., Desair J., Fickel T., Finne E.A., Frison C., Haensel M., Hinsch M., Kulfan T., Kumagai J.A., Mialyk O., Nawrath M., Nevzati F., Washbourne C., **Wübbelmann T.** (2023): Head in the clouds, feet on the ground: how transdisciplinary learning can foster transformative change - insights from a summer school. *Biodiversity and Conservation*, 32, 3533-3568, DOI: 10.1007/s10531-023-02603-0

Bamunawala, J., Ranasinghe R., **Sirisena J.** (2023): Impact of Ebb-Delta dynamics on shoreline evolution along inlet-interrupted coasts. *Frontiers in Marine Science*, 10, 1224881, DOI: 10.3389/fmars.2023.1224881

**Bathiany S.**, Belleflamme A., **El Zohbi J.**, Ney P., Goergen K., **Rechid D.** (2023): Increasing interannual climate variability during crop flowering in Europe. *Environmental Research Letters*, 18(4), 044037, DOI: 10.1088/1748-9326/acc87e

Baumann L., Riechers M., **Celliers L.**, Ferse S.C.A. (2023): Anticipating and transforming futures: a literature review on transdisciplinary coastal research in the Global South. *Ecosystems and People*, 19(1), 2288957, DOI: 10.1080/26395916.2023.2288957

**Bell L.**, Schlünzen H., **Sieck K.** (2023): Influence of data uncertainty on cold season threshold-based climate indices. *Meteorologische Zeitschrift*, 32(3), 195-206, DOI: 10.1127/metz/2023/1158

Belleflamme A., Goergen K., Wagner N., Kollet S., **Bathiany S., El Zohbi J., Rechid D.**, Vanderborght J., Vereecken H. (2023): Hydrological forecasting at impact scale: the integrated ParFlow hydrological model at 0.6km for climate resilient water resource management over Germany. *Frontiers in Water*, 5, 1183642, DOI: 10.3389/frwa.2023.1183642

Bourgault P., Huard D., Smith T.J., Logan T., Aoun A., Lavoie J., Dupuis E., Rondeau-Genesse G., Alegre R., Barnes C., Beaupré Laperrière A., Biner S., Caron D.,

Ehbrecht C, Fyke J., Keel T., Labonté M.P., **Lierhammer L.**, Low J.F., Quinn J., Roy P., Squire D., Stephens A., Tanguy M., Whelan C. (2023): xclim: xarray-based climate data analytics. *Journal of Open Source Software*, 8(85), 5415, DOI: 10.21105/joss.05415

Bustamante M., Joyashree Roy J., Ospina D., Achakulwisut P., Aggarwal A., Bastos A., Broadgate W., Canadell J.G., Carr E.R., Chen D., Cleugh H.A., Ebi K.L., Edwards C., Farbotko C., Fernández-Martínez M., Frölicher T.L., Fuss S., Geden O., Gruber N., Harrington L.J., Hauck J., Hausfather Z., Hebden S., Hebinck A., Huq S., Huss M., Jamero M.L.P., Juhola S., Kumarasinghe N., Lwasa S., Mallick B., Martin M., McGreevy S., Mirazo P., Mukherji A., Muttitt G., Nemet G.F., Obura D., Okereke C., Oliver T., Orlove B., Ouedraogo N.S., Patra P.K., Pelling M., Pereira L.M., Persson Å., Pongratz J., Prakash A., Rammig A., Raymond C., Redman A., **Reveco C.**, Rockström J., Rodrigues R., Rounce D.R., Schipper E.L.F., Schlosser P., Selomane O., Semieniuk G., Shin Y.J., Siddiqui T.A., Singh V., Sioen G.B., Sokona Y., Stammer D., Steinert N.J., Suk S., Sutton R., Thalheimer L., Thompson V., Trencher G., van der Geest K., Werners S.E., **Wübbelmann T.**, Wunderling N., Yin J., Zickfeld K., Zscheischler J. (2023): Ten New Insights in Climate Science 2023/2024. *Global Sustainability*, 7, e19, DOI: 10.1017/sus.2023.25

**Cabana D., Rölfer L., Evadzi P., Celliers L.** (2023): Enabling climate change adaptation in coastal systems: A systematic literature review. *Earth's Future*, 11(8), e2023EF003713, DOI: 10.1029/2023EF003713

**Celliers L., Rölfer L.**, Rivers N., Rosendo S., Fernandes M., Snow B., **Manez Costa M.** (2023): Stratification of stakeholders for participation in the governance of coastal social-ecological systems. *Ambio*, 52, 1418-1430, DOI: 10.1007/s13280-023-01844-1

**Egerer S., Fajardo Puente A.**, Peichl M., Rakovec O., Samaniego L., Schneider U.A. (2023): Limited potential of irrigation to prevent potato yield losses in Germany under climate change. *Agricultural Systems*, 207, 103633, DOI: 10.1016/j.agsy.2023.103633

Gliksman D., Averbeck P., Becker N., Gardiner B., Goldberg V., Grieger J., Handorf D., **Haustein K.**, Karwat A., **Knutzen F.**, Lentink H.S., Lorenz R., Niermann D., Pinto J.G., Queck R., Ziemann A., Franzke C.L.E. (2023): Review Article: A European perspective on wind and storm damage – from the meteorological background to index-based approaches to assess impacts. *Natural Hazards and Earth System Sciences*, 23(6), 2171-2201, DOI: 10.5194/nhess-23-2171-2023

**Greve P.**, Burek P., Guillaumot L., van Meijgaard E., Aalbers E., Smilovic M.M., Sperna-Weiland F., Taher Kahil T., Wada Y. (2023): Low flow sensitivity to water withdrawals in Central and Southwestern Europe under 2 K global warming. *Environmental Research Letters*, 18(9), 094020, DOI: 10.1088/1748-9326/acec60

**Hoffmann P., Reinhart V., Rechid D.**, de Noblet-Ducoudré N., Davin E.L., **Asmus C.**, Bechtel B., Böhner J., Katragkou E., Luyssaert S. (2023): High-resolution land use and land cover dataset for regional climate modelling: historical and future changes in Europe. *Earth System Science Data*, 15(8), 3819-3852, DOI: 10.5194/essd-15-3819-2023

- Kenfack K., **Tamoffo A.T.**, Djiotang Tchotchou L. A., Vondou D. A. (2023): Assessment of uncertainties in reanalysis datasets in reproducing thermodynamic mechanisms in the moisture budget's provision in the Congo Basin. *Theoretical and Applied Climatology*, 154, 613-626, DOI: 10.1007/s00704-023-04576-0
- Köhnke F., Steuri B., El Zohbi J., Görl K.**, Borchers M., Förster J., Thrän D., Mengis N., Oschlies A., **Jacob D.** (2023): On the path to net-zero: Establishing a multi-level system to support the complex endeavor of reaching national carbon neutrality. *Frontiers in Climate*, 5, 1056023, DOI: 10.3389/fclim.2023.1056023
- Kotova L.**, Leissner J., Winkler M., Kilian R., Bichlmair S., Antretter F., Moßgraber J., Reuter J., Hellmund T., Matheja K., Rohde M., Mikolajewicz U. (2023): Making use of climate information for sustainable preservation of cultural heritage: applications to the KERES project. *Heritage Science*, 11, 18, DOI: 10.1186/s40494-022-00853-9
- Ley D., **Guillen T.**, Castaneda A., Hidalgo H.G., Girot Pignot P.O., Hernández R., Alfaro E.J., Castellanos E. (2023): Central America urgently needs to reduce the growing adaptation gap to climate change. *Frontiers in Climate*, 5, 1215062, DOI: 10.3389/fclim.2023.1215062
- Li J., Li Y., **Steppeler J.**, Laurian A., Fang F., Knapp D. (2023): Challenges and prospects for numerical techniques in atmospheric modeling. *Bulletin of the American Meteorological Society*, 104(2), E449- E455, DOI: 10.1175/BAMS-D-22-0269.1
- Nana H.N., Tanessong R.S., Djiotang Tchotchou L.A., **Tamoffo A.T.**, Moihamette F., Vondou D.A. (2023): Influence of strong South Atlantic Ocean Dipole on the Central African rainfall's system. *Climate Dynamics*, 62, 1-16, DOI: 10.1007/s00382-023-06892-7
- Nikolaou N., **Bouwer L.**, Dallavalle M., Valizadeh M., Stafoggia M., Peters A., Kathrin Wolf K., Schneider A. (2023): Improved daily estimates of relative humidity at high resolution across Germany: A random forest approach. *Environmental Research*, 238(Pt 2), 117173, DOI: 10.1016/j.envres.2023.117173
- Reveco-Umana C.** (2023): Exploring the use of climate information as practice. *Climate Services*, 30, 100396, DOI: 10.1016/j.cliser.2023.100396
- Rocklöv J., Semenza J.C., Dasgupta S., Robinson E.J.Z., Abd El Wahed A., Alcayna T., Arnés-Sanz C., Bailey M., Bärnighausen T., Bartumeus F., **Bouwer L.M.**, Bretonnière P.A., Bunker A., Chavardes C., Encarnação J., González-Reviriego N., Guo J., Johnson K., Koopmans M.P.G., **Máñez-Costa M.**, Michaelakis A., Montalvo T., Omazic A., Palmer J.R.B., Preet R., Romanello M., Alam M.S., Sikkema R.S., Terrado M., Treskova M., van Daalen K.R., Urquiza D., IDAlert consortium, Lowe R. (2023): Decision-support tools to build climate resilience against emerging infectious diseases in Europe and beyond. *The Lancet Regional Health – Europe*. 32, 100701, DOI: 10.1016/j.lanepe.2023.100701

- Rölfer L., Celliers L.,** Fernandes M., Rivers N., Snow B., Abson D.J. (2023): Assessing collaboration, knowledge exchange and stakeholder agency in coastal governance to enhance climate resilience. *Regional Environmental Change*, 24, 6, DOI: 10.1007/s10113-023-02163-7
- Rousi E., Fink A.H., Andersen L.S., Becker F.N., Beobide-Arsuaga G., Breil M., Cozzi G., Heinke J., Jach L., Niermann D., Petrovic D., Richling A., Riebold J., Steidl S., Suarez-Gutierrez L., Tradowsky J.S., Coumou D., Düsterhus A., Ellsäßer F., Fragkoulidis G., Gliksman D., Handorf D., **Haustein K.**, Kornhuber K., Kunstmann H., Pinto J.G., Warrach-Sagi K., Xoplaki E. (2023): The extremely hot and dry 2018 summer in central and northern Europe from a multi-faceted weather and climate perspective. *Natural Hazards and Earth System Sciences*, 23(5), 1699-1718, DOI: 10.5194/nhess-23-1699-2023
- Schmitt A.U.,** Ament F., de Araújo A.C., Sá M., Teixeira P. (2023): Modeling atmosphere-land interactions at a rainforest site – a case study using Amazon Tall Tower Observatory (ATTO) measurements and reanalysis data. *Atmospheric Chemistry and Physics*, 23(16), 9323-9346, DOI: 10.5194/acp-23-9323-2023
- Schmitt A.U.,** Burgemeister F., Dorff H., Finn T., Hansen A., Kirsch B., Lange I., Radtke J., Ament F. (2023): Assessing the weather conditions for urban cyclists by spatially dense measurements with an agent-based approach. *Meteorological Applications*, 30(6), e2164, DOI: 10.1002/met.2164
- Sein D.V., Martyanov S.D., Dvomikov A.Y., Cabos W., Ryabchenko V.A., Mishra A.K., Limareva N., Alekseeva E., **Jacob D.,** Kumar P. (2023): Future climate change in the Northern Indian Ocean as simulated with a high-resolution regional earth system model. *Climate Dynamics*, 62, 911-932, DOI: 10.1007/s00382-023-06939-9
- Senatilleke U., **Sirisena J.,** Gunathilake M.B., Muttill N., Rathnayake U. (2023): Monitoring the meteorological and hydrological droughts in the largest river basin (Mahaweli River) in Sri Lanka. *Climate*, 11(3), 57, DOI: 10.3390/cli11030057
- Sengupta S., Kovalevsky D., Bower L.M.,** Scheffran J. (2023): Urban planning of coastal adaptation under sea-level rise: An agent-based model in the VIABLE framework. *Urban Science*, 7(3), 79, DOI: 10.3390/urbansci7030079
- Steppeler J.** (2023): Spherical grid creation and modeling using the Galerkin Compiler GC\_Sphere. *Atmosphere*, 14(6), 966, DOI: 10.3390/atmos14060966
- Tamoffo A.T.,** Akinsanola A.A., **Weber T.** (2023): Understanding the diversity of the West African monsoon system change projected by CORDEX-CORE regional climate models. *Climate Dynamics*, 61, 2395-2419, DOI: 10.1007/s00382-023-06690-1
- Tamoffo A.T.,** Dosio A., **Weber T.,** Vondou D. A. (2023): Dynamic and thermodynamic contributions to rainfall changes in the Congo Basin: Evaluation of the impact of an RCM's formulation. *Atmosphere*, 14(12), 1808, DOI: 10.3390/atmos14121808
- Valencia Cotera R.,** Guillaumot L., Sahu R.K., **Nam C., Lierhammer L., Manez Costa M.** (2023): An assessment of water management measures for climate change

adaptation of agriculture in Seewinkel. *Science of the total Environment*, 885. 163906, DOI: 10.1016/j.scitotenv.2023.163906

Vandemeulebroucke I., **Kotova L.**, Caluwaerts S., Van Den Bossche N. (2023): Freeze-thaw risk in solid masonry: The difference between a climate-based and response-based analysis to study climate change. *Journal of Physics: Conference Series*, 2654, 012023, DOI: 10.1088/1742-6596/2654/1/012023

Vögt V., **Harrs J.**, **Reinhardt V.**, Hollenbach P., Bühler M.M., Tewes T. (2023): Implementing agile data workflows to unlock climate-resilient urban planning. *Climate*, 11(9), 174, DOI: 10.3390/cli11090174

Wang S.; Lake I., **Langendijk G.S.**, Yang Y. (2023): Promoting involvement of early-career scientists from the Asia-Pacific region in regional integrated and sustainable development through active participation and networking. *APN Science Bulletin*, 13(1), 5-12, DOI: 10.30852/sb.2023.2091

**Wübbelmann T.**, Förster K., **Bouwer L.M.**, Dworczyk C., **Bender S.**, Burkhard B. (2023): Urban flood regulating ecosystem services under climate change: How can nature-based solutions contribute? *Frontiers in Water*, 5, 1081850, DOI: 10.3389/frwa.2023.1081850

Xu J.W., Zhi X.F., Sein D.V., Cabos W., Luo Y., Zhang L., Dong F., Fraedrich K., **Jacob D.** (2023): Predictability of coastal boundary layer jets in South China using atmosphere-ocean coupling. *Journal of Geophysical Research: Atmospheres*, 128(16), e2023JD039184, DOI: 10.1029/2023JD039184