

GERICS Publications (peer reviewed)

2024

Asselin O., Leduc M., Paquin D., de Noblet-Ducoudré N., **Rechid D.**, Ludwig R. (2024): Blue in green: forestation turns blue water green, mitigating heat at the expense of water availability. *Environmental Research Letters*, 19(11), 114003, DOI: 10.1088/1748-9326/ad796c

Augustin J., Hischke S., **Hoffmann P.**, Castro D., Obi N., Czerniejewski A., Dallner R., **Bouwer L.M.** (2024): Auswirkungen thermischer Belastungen auf die Gesundheit – eine bundesweite Analyse auf Grundlage von GKV-Routinedaten zwischen 2012-2021. *Bundesgesundheitsblatt*, DOI: 10.1007/s00103-024-03968-5

Bajracharya S., Gunawardhana L.N., **Sirisena J.**, Bamunawala J., Rajapakse L., Odara M.G.N. (2024): Unlocking the mysteries of drought: integrating snowmelt dynamics into drought analysis at the Narayani River Basin, Nepal. *Natural Hazard*, DOI: 10.1007/s11069-024-07004-2

Betant C.A., **Weber T.**, **Hoffmann P.**, Ndao S., Djiondo Ngongang R., Meukaleuni C., Djomou D., **Lenouo A.** (2024): Model analysis of coastal and continental impacts on boundary layer meteorology over West Africa. *Earth Systems and Environment*, DOI: 10.1007/s41748-024-00428-7

Bowyer P., Spyrou C., Loupis M., di Sabatino S., Debele S., Kumar P., Pfeiffer J., Zieher T., Lechner V., Ollauri A., Mickovski S., Cremin E., Menenti M., Alfieri S., Basu A.S., Basu B., Pilla F. (2024): Modelled effectiveness of NbS in reducing disaster risk: evidence from the OPERANDUM project. *Nature-Based Solutions*, 100127, DOI: 10.1016/j.nbsj.2024.100127

Cabana D., Pinna S., Farina S., Grech D., Barbieri N., Guala I. (2024): Coastal cultural ecosystem services and adolescents' subjective well-being. *AMBIO*, 53, 1561-1573, DOI 10.1007/s13280-024-02043-2

Caillaud C., Somot S., Douville H., Alias A., Bastin S., Brienon S., Demory M.E., Dobler A., Feldmann H., **Frisius T.**, Goergen K., Kendon E.J., Keuler K., Lenderink G., Mercogliano P., Pichelli E., Soares P.M.M., Tölle M.H., de Vries H. (2024): Northwestern mediterranean heavy precipitation events in a warmer climate: robust versus uncertain changes with a large convection-permitting model ensemble. *Geophysical Research Letters*, 51(6), e2023GL105143, DOI: 10.1029/2023GL105143

Çetin I.I., Yücel I., Yılmaz M.T., Ånol B. (2024): Historical variability of coupled model intercomparison project version 6 (CMIP6)-driven surface winds and global reanalysis data for the Eastern Mediterranean. *Theoretical and Applied Climatology*, DOI: 10.1007/s00704-024-04869-y

De Zoysa S., **Sirisena J.**, Perera H., Fernando S., Gunathilake M., Rathnayake U. (2024): Development of intensity-duration-frequency curves for Sri Lanka using satellite-based precipitation products – Understanding environmental conditions and concerns. *Case Studies in Chemical and Environmental Engineering*, 9, 100713, DOI 10.1016/j.cscee.2024.100713

Doblas-Reyes F.J., St Clair A.L., Baldissera Pacchetti M., Checchia P., **Cortekar J.**, Klostermann J.E.M., Krauß W., Muñoz A.G., Mysiak J., Paz J., Terrado M., **Villwock A.**, Volarev M., Zorita S. (2024): Standardisation of equitable climate services by supporting a community of practice. *Climate Services*, 36, 100520, DOI: 10.1016/j.cliser.2024.100520

Dunlop T., Khojasteh D., Cohen-Shacham E., Glamore W., Haghani M., van den Bosch M., Rizzi D., **Greve P.**, Felder S. (2024): The evolution and future of research on nature-based solutions to address societal challenges. *Communications Earth & Environment*, 5, 132, DOI: 10.1038/s43247-024-01308-8

Ebedi-Nding D.D., **Tamoffo A.T.**, Mouassom F.L. (2024): Extremes Events and Socio-Economic Impacts in Central Africa: A CMIP6-Based Analysis of Projections. *Modeling Earth Systems and Environments*, DOI: 10.1007/s40808-024-02139-4

Fernando R., Ratnasooriya H., Bamunawala J., **Sirisena J.**, Odara M.G.N., Gunawardana L., Rajapakse L. (2024): Assessing climate-change-driven-impacts on water scarcity: A case study of low-flow dynamics in the lower Kalu River Basin, Sri Lanka. *Water*, 16(10), 1317, DOI: 10.3390/w16101317

Frisia T., Cetin I.I., Keup-Thiel E., Rechid D. (2024): Analysis of high-resolution convection-permitting regional climate simulations with respect to the impact of spatial resolution on simulated wind climate. *Journal of Physics: Conference Series*, 2767(9), 92023. DOI 10.1088/1742-6596/2767/9/092023

Harris J., Reinhart V., Vögts V., Scheib P., Tewes T., Pohl T. (2024): Integrating climate information into urban climate change adaptation: A case study of municipal processes in Constance. *Climate Services*, 35, 100495, DOI: 10.1016/j.cliser.2024.100495

Harzendorf F., Markus T., Ross A., **Valencia Cotera R.**, Baust C., Voegele S., Taraborrelli D., Zapp P., Karydis V.A., **Bowyer P.**, Stolten D. (2024): Criteria for effective site selection of direct air capture and storage projects. *Environmental Research Letters*, 19, 111009, DOI: 10.1088/1748-9326/ad7a0f

Jacob D., Guillén Bolaños T. (2024): Editorial introduction to the topical collection: Accrual of climate Change risk in six vulnerable countries. *Climatic Change*, 117, 45, DOI: 10.1007/s10584-024-03691-9

Jones C.G., Adloff F., Booth B., Cox P., Eyring V., Friedlingstein P., Frieler K., Hewitt H., Jeffery H., Joussaume S., Koenigk T., Lawrence B.N., O'Rourke E., Roberts M., Sanderson B., Séférian R., Somot S., Vidale P.L., van Vuuren D., Acosta M., Bentsen M., Bernardello R., Betts R., Blockley E., Boé J., Bracegirdle T., Braconnot P., Brovkin V., Buontempo C., Doblas-Reyes F.J., Donat M.G., Epicoco I., Falloon P., Fiore S., Froelicher T., Fuckar N., Gidden M., Goessling H., Graversen R.G.,

Gualdi S., Gutiérrez J.M., Ilyina T., **Jacob D.**, Jones C., Juckes M., Kendon E., Kjellström E., Knutti R., Lowe J.A., Mzielinski M., Nassisi P., Obersteiner M., Regnier P., Roehrig R., Salas y Melia D., Schleussner C.F., Schulz M., Scoccimarro E., Terray L., Thiemann H., Wood R., Yang S., Zaehle S. (2024): Bringing it all together: Science and modelling priorities to support international climate policy. *Earth System Dynamics*, 15(5), 1319- 1351, DOI: 10.5194/esd-15-1319-2024

Jonkman S.N., Curran A., **Bouwer L.M.** (2024): Floods have become less deadly: an analysis of global flood fatalities 1975-2022. *Natural Hazards*, 120, 6327-6342 DOI: 10.1007/s11069-024-06444-0

Juhola S., **Bouwer L.M.**, Huggel C., Mechler R., Muccione V., Wallmann-Helmer I. (2024): A new dynamic framework is required to assess adaptation limits. *Global Environmental Change*, 87, 102884, DOI: 10.1016/j.gloenvcha.2024.102884

Junk J., **Torres A.**, El Jaroudi M., Eickermann M. (2024): Impact of climate change on the phenology of winter oilseed rape (*Brassica napus* L.). *Agriculture*, 14(7), 1049, DOI: 10.3390/agriculture14071049

Katragkou E., Sobolowski S., **Teichmann C.**, Solmon F., Pavlidis V., **Rechid D.**, **Hoffmann P.**, Fernandez J., Nikulin G., **Jacob D.** (2023): Delivering an improved framework for the new generation of CMIP6-driven EURO-CORDEX regional climate simulations. *Bulletin of the American Meteorological Society*, 105(6), E962-E974, DOI: 10.1175/BAMS-D-23-0131.1

Katsaros K., **Marggraf C.**, Ebi K.L., Buvana K., Hashizume M., Lung S.C.C., Murray V., Thiam S., **Huang-Lachmann J.T.** (2024): Exploring interconnections: A comprehensive multi-country analysis of climate change, energy demand, long-term care, and health of older adults. *Maturitas*, 184, 107961, DOI: 10.1016/j.maturitas.2024.107961

Katzfey J., Schlünzen K.H., Hoffmann P. (2024): Effects of urban areas on the diurnal cycle of temperature and precipitation in a global climate simulation. *Quarterly Journal of Royal Meteorological Society*, early view, DOI: 10.1002/qj.4847

Kenfack K., Marra F., Djomou Z.Y., Djotang Tchotchou L.A., **Tamoffo A.T.**, Vondou D.A. (2024): Dynamic and thermodynamic contribution to the October 2019 exceptional rainfall in West Central Africa. *Weather and Climate Dynamics*, 5(4), 1457-1472, DOI: 10.5194/wcd-5-1457-2024

Kenfack K., **Tamoffo A.T.**, Djotang Tchotchou L.A., Marra F., Kaissassou S., Nana H.N., Vondou D.A. (2024): Processes behind the decrease in Congo Basin precipitation during the rainy seasons inferred from ERA-5 reanalysis. *International Journal of Climatology*, 44(5), 1778-1799, DOI: 10.1002/joc.8410

Köhnke F., **Steuri B.**, Baetcke L., Borchers M., Brinkmann T., Dittmeyer R., Dornheim M., **El Zohbi J.**, Förster J., Gawel E., **Görl K.**, Herbst M., Heß D., Kalhori A., Korte K., Li Z., Markus T., Mengis N., Monnerie N., Oschlies A., Prats-Salvado E., Reusch T., Rhoden I., Sachs T., Schaller R., Schill E., Simon S., Stevenson A., Thoni T., Thrän D., Xiao M., **Jacob J.** (2024): A storyline approach: Integrating comprehensive, interdisciplinary research results to create narratives – in the

context of the net-zero target in Germany. *Frontiers in Environmental Science*, 12, DOI: 10.3389/fenvs.2024.1433491

Langendijk G.S., Halenka T., **Hoffmann P.**, Adinolfi M., Campino A.A., Asselin O., Bastin S., Bechtel B., Belda M., Bushenkova A., Campanale A., Chun K.P., Constantinidou K., Coppola E., Demuzere M., Doan Q.V., Evans J.P., Feldmann H., Fernandez J., Fita L., Hadjinicolaou P., Hamdi R., Hundhausen M., Grawe D., Johannsen F., Milovac J., Katragkou E., El Islam Kerroumi N., Kotlarski S., **Le Roy B.G.**, Lemonsu A., Lennard C., Lipson M., Mandal S., Muñoz Pabón L.E., Pavlidis V., **Pietikäinen J.P.**, Raffa M., Raluy-López E., **Rechid D.**, Ito R., Schulz J.P., Soares P.M.M., Takane Y., **Teichmann C.**, Thatcher M., Top S., Van Schaeybroeck B., Wang F., Yuan J. (2024): Towards better understanding the urban environment and its interactions with regional climate change - The WCRP CORDEX Flagship Pilot Study URB-RCC. *Urban Climate*, 58, 102165. DOI 10.1016/j.ulclim.2024.102165

Leifsson C., Buras A., Klesse S., Baittinger C., Bat-Enerel B., Battipaglia G., Biondi F., Stajić B., Budeanu M., Čada V., Cavin L., Claessens H., Čufar K., de Luis M., Dorado-Liñán I., Dulamsuren C., Garamszegi B., Grabner M., Hacket-Pain A., Hansen J.K., Hartl C., Huang W., Janda P., Jump A.S., Kazimirović M., **Knutzen F.**, Kreyling J., Land A., Latte N., Lebourgeois F., Leuschner C., Longares L.A., Martinez del Castillo E., Menzel A., Motta R., Muffler-Weigel L., Nola P., Panayatov, M., Petritan A.M., Petritan I.C., Popa I., Roibu C.C., Rubio-Cuadrado Á., Rydval M., Scharnweber T., Camarero J.J., Svoboda M., Toromani E., Trotsiuk V., van der Maaten-Theunissen M., van der Maaten E., Weigel R., Wilmking M., Zlatanov T., Rammig A., Zang C.S. (2024): Identifying drivers of non-stationary climate-growth relationships of European beech. *Science of the Total Environment*, 937, 173321, DOI: 10.1016/j.scitotenv.2024.173321

Molina M.O., Careto J.M., Gutiérrez C., Sánchez E., Goergen K., Sobolowski S., Coppola E., Pichelli E., Ban N., Belušić D., Short C., Caillaud C., Dobler A., Hodnebrog Ø., Kartsios S., Lenderink G., de Vries H., Göktürk O., Milovac J., Feldmann H., Truhetz H., Demory M.E., Warrach-Sagi K., Keuler K., Adinolfi M., Raffa M., Tölle M., **Sieck K.**, Bastin S., Soares P.M.M. (2024): The added value of simulated near-surface wind speed over the Alps from a km-scale multimodel ensemble. *Climate Dynamics*, DOI: 10.1007/s00382-024-07257-4

Motta Zanin G., **Muwafu S.P.**, **Manez Costa M.** (2024): Nature-based solutions for coastal risk management in the Mediterranean basin: a literature review. *Journal of Environmental Management*, 356, 120667, DOI: 10.1016/j.jenvman.2024.120667

Mouassom F.L., **Tamoffo A.T.** (2024): Understanding the environmental conditions of the extreme precipitation event on June 20, 2015, in the city of Douala, Cameroon. *Natural Hazards*, DOI: 10.1007/s11069-024-06681-3

Muwafu S.P., Celliers L., Scheffran J., **Manez Costa M.** (2024): Community Governance and Socially Inclusive Nature-Based Solutions for Sustainable Urban Stormwater Management in Sub-Saharan Africa: A Case Study of Kampala, Uganda. *Sustainability*, 16(19), 8328, DOI: 10.3390/su16198328

Muwafu S.P., Rölfer L., **Manez Costa M.**, Scheffran J. (2024): A framework for assessing social structure in community governance of sustainable urban drainage systems: Insights from a literature review. *Mitigation and Adaptation Strategies for Global Change*, 29,42, DOI: 10.1007/s11027-024-10136-2

Nam C., Lierhammer L., Buntemeyer L., Evadzi P., Cabana D., Celliers L. (2024): Changes in universal thermal climate index from regional climate model projections over European beaches. *Climate Services*, 34, 100447, DOI: 10.1016/j.cliser.2024.100447

Nam C., Massano L.T., Graca A., Cotroneo R., Dell'Aquila A., Caboni F. (2024): Valuation of climate services for viticulturists: Tackling fungal diseases. *Climate Services*, 34, 100456, DOI: 10.1016/j.cliser.2024.100456

Nana H.N., **Tamoffo A.T.**, Kaissassou S., Djotang Tchotchou L.A., Tanessong R.S., Kamsu-Tamo P.H., Kenfack K., Vondou D.A. (2024): Performance-based evaluation of NMME and C3S models in forecasting the June-August Central African rainfall under the influence of the South Atlantic Ocean Dipole. *International Journal of Climatology*, 44(7), 2462-2483, DOI: 10.1002/joc.8463

Neset T.S., Oen A., **Máñez Costa M.**, Celliers L. (2024): Co-designing climate services: Concepts and practices of the ERA4CS projects. *Climate Services*, 34, 100461, DOI: 10.1016/j.cliser.2024.100461

Nolte, A., Haaf E., Heudorfer B., **Bender S.**, Hartmann J. (2024): Disentangling coastal groundwater level dynamics on a global data set. *Hydrology and Earth System Sciences*, 28(5), 1215-1249, DOI: 10.5194/hess-2023-180

Schmidt, L., Feital, M., **Cortekar, J.**, di Giulio, G., Engels, A. (2024): Understanding the science-policy interface in urban climate governance from a co-production perspective: Insights from the cases of Hamburg and São Paulo. *Environmental Science and Policy*, 156, 103750, DOI: 10.1016/j.envsci.2024.103750

Pant M., Shahi N.K., **Remedio A.R.**, Mall R.K., Rai S., Bhatla R. (2024): Representing rainfall extremes over the Indo-Gangetic Plains using CORDEX-CORE simulations. *Climate Dynamics*, 62, 3721-3742, DOI: 10.1007/s00382-023-07095-w

Smilovic M., Burek P., Fridman D., Guillaumot L., de Bruijn J., **Greve P.**, Wada Y., Tang T., Kronfuss M., Hanus S., Tramberend S., Kahil T. (2024): Water circles – a tool to assess and communicate the water cycle. *Environmental Research Letters*, 19(2), 21003, DOI: 10.1088/1748-9326/ad18de

Stevens B., Adami S., Ali T., Anzt H., Aslan Z., Attinger S., Bäck J., Baehr J., P. 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., Choudhury A.D., 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., Michelsen 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., Ziemen F. (2024): Earth Virtualization Engines (EVE). *Earth System Science Data*, 16(4), 2113-2122, DOI: 10.5194/essd-16-2113-2024

Street R., **Weber T.** (2024): Editorial for climate variability, its impacts on hydropower, agriculture, food security and adaptation strategies in Ethiopia and republic of South Sudan. *Climate Services*, 34, 100460, DOI: 10.1016/j.cliser.2024.100460

Tamoffo A.T., Weber T., Abel D., Ziegler K., Cabos W., Sein D.V., Laux P. (2024): Regionally-coupled climate model ROM projects more plausible precipitation change over Central Equatorial Africa. *Journal of Geophysical Research: Atmospheres*, 129(21), e2024JD041466, DOI: 10.1029/2024JD041466

Tamoffo A.T., Weber T., Cabos W., Sein D.V., Dosio A., **Rechid D., Remedio A.R., Jacob D.** (2024): Mechanisms of added value of a coupled global ocean-regional atmosphere climate model over Central Equatorial Africa. *Journal of Geophysical Research: Atmospheres*, 129(3), e2023JD039385, DOI: 10.1029/2023JD039385

Tamoffo A.T., Weber T., Cabos W., Sein D. V., **Rechid D.**, Monerie P. A., Cook K.H., **Jacob D.** (2024): West African monsoon system's responses to a global ocean-regional atmosphere coupling. *Journal of Climate*, 37(16), 4291-4312, DOI: 10.1175/JCLI-D-23-0749.1

Valencia Cotera R., Egerer S., Nam C., Lierhammer L., Moors L., Máñez Costa M. (2024): Resilient agriculture: Water management for climate change adaptation in Lower Saxony. *Journal of Water and Climate Change*, 15(3), 1034-1053, DOI: 10.2166/wcc.2024.455

Vandemeulebroucke I., **Kotova L.**, Caluwaerts S., Van Den Bossche N. (2024): Impact of climate change on degradation risks in solid masonry walls: Uncertainty assessment using a multi-model ensemble. *Building and Environment*, 264, 111910, DOI: 10.1016/j.buildenv.2024.111910

Wijayaweera N., Gunawardhana L., Bamunawala J., **Sirisena J.**, Rajapakse L., Patabendige C.S., Karunaweera H. (2024): Use of machine learning and indexing techniques for identifying industrial pollutant sources: A case study of the lower Kelani river basin, Sri Lanka. *Water*, 16(19), 2766, DOI: 10.3390/w16192766

Wohland J., **Hoffmann P.**, Lima D.C.A., Breil M., Asselin O., **Rechid D.** (2024): Extrapolation is not enough: impacts of extreme land use change on wind profiles and wind energy according to regional climate models. *Earth System Dynamics*, 15(5), 1385-1400, DOI: 10.5194/esd-15-1385-2024

Yang C., Lei N., Menz C., Ceglar A., **Torres-Matallan J.A.**, Li S., Jiang Y.L., Tan X.M., Tao L., He F., Li S.G., Liu B., Yang F., Frag H., Santos J.A. (2024): Regional uncertainty analysis between crop phenology model structures and optimal parameters. *Agricultural and Forest Meteorology*, 355, 110137, DOI: 10.1016/j.agrformet.2024.110137