Upfront reply:

"Dear Juan,

thanks so much for your careful review and the very relevant issues you raise.

Please find our point-by-point response below.

Best greetings, on behalf of the author team,

Katja Frieler"

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Dear Juan Antonio Añel,

Thanks for pointing to this. We are very sorry as part of the issues may be due to a miscommunication from our side. Please find our individual responses below.

Kind regards

Martin and Katja

Comment 1: First, the section states "The MIT data on tropical cyclone tracks with wind and precipitation fields data shall be used for non-commercial research or academic purposes only. Data can be made available by the ISIMIP team upon written consent by Kerry Emanuel (MIT, email: emanuel@mit.edu)". Dr. Emanuel is a co-author of this submitted manuscript, therefore, it does not make any sense to point out to readers to contact somebody that is co-author to get access to the mentioned data. Therefore, you must publish the mentioned data in one of the repositories acceptable according to our policy, and reply to this comment with its link and permanent identifier. If some kind of law or regulation prevents you of sharing such data, then you need to provide us with evidence of it, and we will study the possibility of granting you an exception to it.

Response: The MIT data on tropical cyclone tracks is produced and owned by WindRiskTech, LLC. As a scientist you have to sign a license to get the data for free. It prohibits the redistribution of the data without express permission from WRT. That is why we cannot fully openly provide the data. However, it is freely available for scientific use. WindRiskTech's business model is to use revenues from sales of data set to commercial interests to fund the provision of free data to researchers. This can only work with researchers signing data licenses. Without such an arrangement, researchers would have to pay for the data. We have worked on an automatisation of the process, such that the data is available online but can only be downloaded after signing the associated license (see attached).

A similar process also applies to the CHAZ track data that is freely available online but can only be downloaded after signing an agreement that the data will only be used for noncommercial purposes.

The wind and precipitation fields generated for the MIT tracks are fully openly available on the ISIMIP repository with an associated DOI. We have changed the statement accordingly.

Comment 2: Second, you state "All other input data described are available for participating modelers with a respective account from the DKRZ server." This information is not enough. We can accept the DKRZ servers as hosting service for the repositories containing the mentioned data, but you must provide specific information (links and permanent identifiers) for all of them. I am aware that you communicated internally before that "The described data includes >1000 data sets that are comprised in quite a number of DOIs. Should we cite all these DOIs here again?". If with your question you were referring to these datasets, the answer to your question if you have used them to produce your manuscript, is "yes". A potential solution for this is that you deposit a document containing such information in a permanent repository and you link in the manuscript such repository (with its link and permanent identifier).

Response: We are very sorry for the miscommunication that is due to the fact that the statement was written for an earlier version of the paper. Meanwhile all climate-related forcing data that has been generated is publicly available on the ISIMIP repository and associated DOIs have been released. The 'Code and data availability' statement has been updated accordingly (response to comment 3). The DOIs have also been added in red to the last column of Table 1. Where we do not provide the data but only suggest an approach we would like to follow to generate them in the future (depending e.g. on funding), we have modified the entries to highlight that these cases are different from the other ones. This refers to the coastal water levels and the de-biased oceanic forcings. The Table now looks like this (all changes highlighted in red):

Table 1: Climate-Related Forcing datasets for ISIMIP3b.

Forcing	Status	Source, description
Climate-related forcings ('picontrol', 'historical', 'ssp126', 'ssp370', 'ssp585')		
Atmospheric forcings ('picontrol', 'historical', 'ssp585', 'ssp370', 'ssp126')		
Gridded atmospheric climate forcing	mandatory	Bias-adjusted data (pre-industrial climate, historical climate, and future projections for the SSP1-2.6, SSP3-7.0, and SSP5-8.5 scenarios) generated by GFDL-ESM4, IPSL-CM6A-LR, MPI-ESM1-2-HR, MRI-ESM2-0, and UKESM1-0-LL within CMIP6 (Lange & Büchner, 2021), see section **2.1**
Local atmospheric climate forcing for lakes	mandatory	Atmospheric data extracted from the data sets above for 72 lakes that have been identified within the lake sector as

		locations (grid cell of the ISIMIP 0.5° grid, ISIMIP3 local lake sites) where models can be calibrated based on observed temperature profiles and hypsometry within ISIMIP3b (depth and area) (Lange and Büchner 2021) .
Tropical cyclone tracks with wind and precipitation fields	mandatory	S~~Available on request (see section **2.2**), s~~amples of synthetic tropical cyclone tracks derived from the five CMIP6 GCMs considered within ISIMIP generated by two different statistical downscaling approaches, see section **2.2**. MIT approach (Emanuel et al., 2008, Emanuel et al., 2025): ● pre-industrial climate from IPSL-CM6A-LR, MPI-ESM1-2-HR and MRI-ESM2-0 (all 1850-2014), and from UKESM1-0-LL (1950-2100) ● historical climate from IPSL-CM6A-LR, MPI-ESM1-2-HR, UKESM1-0-LL and GFDL-ESM4 (all 1850-2014), and from MRI-ESM2-0 (1950-2014). ● Future climate: ssp126 (2061-2100), ssp370 (2015-2100) and ssp585 (2015-2100) from IPSL-CM6A-LR, MPI-ESM1-2-HR, MRI-ESM2-0, UKESM1-0-LL, and ssp585 (2061-2100) from GFDL-ESM4. Two different configurations (SD and CRH, see section **2.2**) of the Columbia HAZard model (CHAZ, Lee et al., 2018, Lee et al., 2025): ● ~~pre-industrial climate (1601-2100) from GFDL-ESM4, IPSL-CM6A-LR, MPI-ESM1-2-HR, MRI-ESM2-0, and UKESM1-0-LL.~~ ● historical climate (1850-2014) from GFDL-ESM4, IPSL-CM6A-LR, MPI-ESM1-2-HR, MRI-ESM2-0, and UKESM1-0-LL ● future climate (2015-2100): ssp126, ssp370, ssp585 from GFDL-ESM4, IPSL-CM6A-LR, MPI-ESM1-2-HR, MRI-ESM2-0, and UKESM1-0-LL. For tracks generated by the MIT approach, we also provide wind and precipitation fields (Quesada-Chacón et al., 2025)
Lightning	mandatory	Flash Rate Monthly Climatology not changing with climate change (Cecil, 2006)

Oceanic forcings ('picontrol', 'historical', 'ssp585', 'ssp370', 'ssp126')		
Oceanic climate forcing	mandatory	Uncorrected data (pre-industrial climate, historical climate, and future projections for the SSP1-2.6, SSP3-7.0, and SSP5-8.5 scenarios) generated by GFDL-ESM4, IPSL-CM6A-LR, MPI-ESM1-2-HR, and UKESM1-0-LL within CMIP6 (Büchner 2024), see section **2.4**
Coastal water levels		
Coastal water levels	mandatory	In section **2.3** we describe a method to generate relative sea level projections that smoothly extend tide gauge observations into the future building on a Bayesian model (Perrette & Mengel, 2025). For ISIMIP3, we plan to extend the framework to all coastlines and directly use ISIMIP GCM output for the global thermosteric and local sterodynamic components, adjusting the gridded simulations to associated observations to ensure a consistent transition from the historical period. Ice sheet and glacier contributions are incorporated through spatial fingerprints, while unresolved vertical land motion processes are estimated from residuals at tide gauges and extrapolated where no observations are available. We are also developing an approach to extend the sea level projections to daily maximum water levels derived from the ISIMIP3 atmospheric forcings (daily mean Surface Air Pressure and daily mean Near-Surface Wind Speed).
Atmospheric composition or fluxes		
Atmospheric CO_2 concentration	mandatory	(Büchner & Reyer, 2022) based on the following sources: 1850-2005: (Meinshausen et al., 2011); 2006-2014: Global annual CO2 from NOAA Global Monthly Mean CO_2 (Lan et al., 2023); 2015-2100: (Meinshausen et al., 2020)
Atmospheric CH_4 concentration	mandatory	(Büchner & Reyer, 2022) based on the following sources: 1850-2014:(Meinshausen et al., 2017); 2015-2100: (Meinshausen et al., 2020)
Climate-Related Forcings for the sensitivity experiment 'varlightning', using above forcing data except for:		

Lightning data ('varlightning')		
Varying lightning according to climate change	mandatory	Lightning data has been generated for the ssp126, ssp370, and ssp850 climate projections from UKESM1-0-LL (Kaplan et al., 2023)
Climate-Related Forcings for the 'de-biased' sensitivity experiment		
Global oceanic forcings		
Oceanic forcings based on de-biased atmospheric forcings	mandatory	In section **2.4.2** we describe an approach to de-bias the oceanic forcings based on the ocean biogeochemistry model NEMO-PISCES forced by a de-biased version of the IPSL-CM6A-LR-based atmospheric forcing as an option to fulfil the demand for de-biased ocean data we would like to follow.
Regional oceanic forcings		
De-biased oceanic forcing based on observed oceanic data for individual variables and regions	mandatory	The regional models of the fisheries and marine ecosystem sector have applied regional bias-adjustments within their impact simulations that are described in section **2.4.3** and that make these simulations part of the 'de-biased' sensitivity experiment in the sector (see Table 2) while the default experiments are based on the raw oceanic forcings.

Comment 3: Also, you state that "Data will be made publicly available... at the ISIMIP data repository at https://data.isimip.org/". First, we can not accept expressions of future compliance with our policy. The policy of the journal is very clear that compliance with code and data availability must be assured before submitting a manuscript to the journal. Therefore, you must publish all the datasets, as they should have been published before submission, and your manuscript desk rejected instead of accepted for Discussions because of such lack of compliance.

Response: All the generated climate-related forcings for ISIMIP3 are now publicly available in the ISIMIP repository (also see response above). Where we only describe a method to generate the data in the future this is also clearly highlighted.

Comment 4: A major problem is that you host your data in the ISIMIP data portal, managed by the PIK. You state that it complies with the policy of the journal, but it does not comply. I have checked the ISIMIP webpage and terms of use. First, we do not have any kind of guarantee that

the PIK servers comply with our requirements for long-term archival, usually requested in at least 15-20 years of secured funding to operate. The ISIMIP portal is simply a subdomain of pik-postdam.de, operating under the same IP address than the PIK webpage. Second, you state that data removal has to be approved by the ISIMIP steering committee, but my understanding is that this is basically the list of authors contributing to this manuscript, which actually means that the authors can decide to remove the data, and this is not acceptable according to the policy of the journal. Also, the "ISIMIP data team" is mentioned, but it is not clear at all who are the persons in such a committee or how it operates. From the structure published in the ISIMIP web page, it looks like if only one person is involved on it, identified as the "ISIMIP data manager".

Response: Thanks for this comment! We have clearly missed the opportunity to clarify the governance and the operational rules of the ISIMIP repository in the 'code and data availability' statement. We rewrote the section and attached a confirmation letter by the the hosting institution, i.e. Potsdam Institute for Climate Impact Research (PIK) e.V. that ensures the long-term sustainability of the repository. As a member of the TIB DOI Consortium PIK commits itself to adhering to the DataCite Consortium Agreement. This includes commitments to data persistence (§4 a.) as well as maintaining and updating metadata (§4 c.) and explicitly forbids "withdrawing content without posting a notification". According to these rules the ISIMIP repository includes a system to document and trace back data issues and updates including information on how to retrieve the archived data. Users who have registered for the 'ISIMIP data' list will be immediately informed by email. The data described in the paper are all covered by DOIs (see response above) which also allows for tracking of potential previous versions.

Comment 4: In summary, there are many outstanding issues regarding your manuscript and its compliance with the policy of the journal, and the fact that it is under review and Discussions without having properly addressed all of them is irregular. Therefore, please, publish the necessary data in one of the repositories listed in our policy and reply to this comment as soon as possible with a modified 'Code and Data Availability' section for your manuscript, which must include the relevant information (link and handle or DOI) of the new repositories, and which you should include in a potentially reviewed manuscript.

Response: We are sorry that we created the wrong impression that only part of the data is openly accessible. We published all data we refer to with DOI and cite them when mentioning them in the paper, so full citations of all data sets are now included in the reference list. We rewrote the "Code and Data Availability" section as follows:

Code and data availability. All generated ISIMIP3 climate-related forcing data described in this paper is publicly available at the ISIMIP data repository The repository is hosted by the Potsdam Institute for Climate Impact Research (PIK) e.V. which is part of the TIB DOI Consortium ensuring persistent, FAIR-compliant data publication, by committing to adhering to the DataCite Consortium Agreement. This includes commitments to data persistence (§4 a.) as well as maintaining and updating metadata (§4 c.), which forbids "withdrawing content without posting a notification". In compliance with these rules a system to document and trace back data issues has been implemented in the repository to comply with this requirement. Additionally, should PIK be unable to continue hosting the ISIMIP repository, it will take responsibility for coordinating a timely

transfer of the full repository and its DOI infrastructure to an appropriate, trusted archive or institutional partner to ensure uninterrupted access and citation continuity. DOIs are used to refer to datasets in a persistent way. Whenever a dataset is replaced a copy is kept on tape, and a new DOI is issued, while the old DOI is kept online with information on how to retrieve the archived data. Whenever we need to replace datasets, we will create a new version of the DOI, marked by a version number at the end. This ensures that every DOI references exactly the datasets, which where public at the time of registration. Detailed information can be found in the ISIMIP terms of use at https://www.isimip.org/gettingstarted/terms-of-use/ (ISIMIP terms of use, 2023).

- I must note that if you do not fix this problem, we will have to reject your manuscript for publication in our journal.

Juan A. Añel

Geosci. Model Dev. Executive Editor

List of DOI for Table 1

- Gridded atmospheric climate forcing & Local atmospheric climate forcing for lakes
  - Stefan Lange, Matthias Büchner (2021): ISIMIP3b bias-adjusted atmospheric climate input data (v1.1). ISIMIP Repository. https://doi.org/10.48364/ISIMIP.842396.1
- Lightning (external)
  - Cecil, D. (2006). LIS/OTD 0.5 Degree High Resolution Monthly Climatology (HRMC) [Data set]. NASA Global Hydrometeorology Resource Center Distributed Active Archive Center. https://doi.org/10.5067/LIS/LIS-OTD/DATA303 Date Accessed: September 2020
- Oceanic climate forcing
  - Matthias Büchner (2024): ISIMIP3b ocean input data (v1.5). ISIMIP Repository. https://doi.org/10.48364/ISIMIP.575744.5
- Atmospheric CO_2 concentration & Atmospheric CH_4 concentration
  - Matthias Büchner, Christopher P.O. Reyer (2022): ISIMIP3b atmospheric composition input data (v1.1). ISIMIP Repository. https://doi.org/10.48364/ISIMIP.482153.1
- Varying lightning according to climate change (external)
  - Kaplan, J. O., Koch, A., & Lau, K. H.-K. (2023). Estimated future global lightning strokes (2010-2100) (v1.0.0) [Data set]. Zenodo. https://doi.org/10.5281/zenodo.7511843
- Tropical cyclones

- Kerry Emanuel, Dánnell Quesada-Chacón, Lisa Novak, Christian Otto (2025): ISIMIP3b tropical cyclone tracks (MIT). ISIMIP Repository. https://doi.org/10.48364/ISIMIP.682793
- Dánnell Quesada-Chacón, Lisa Novak, Linn Hamester, Christian Otto (2025): ISIMIP3b tropical cyclone wind and rain fields (MIT). ISIMIP Repository. https://doi.org/10.48364/ISIMIP.779038
- Chia-Ying Lee, Suzana J. Camargo, Adam Sobel, Michael K. Tippett, Dánnell Quesada-Chacón, Matthias Büchner, Lisa Novak, Christian Otto (2025): ISIMIP3b tropical cyclone tracks (CHAZ). ISIMIP Repository. https://doi.org/10.48364/ISIMIP.808980