



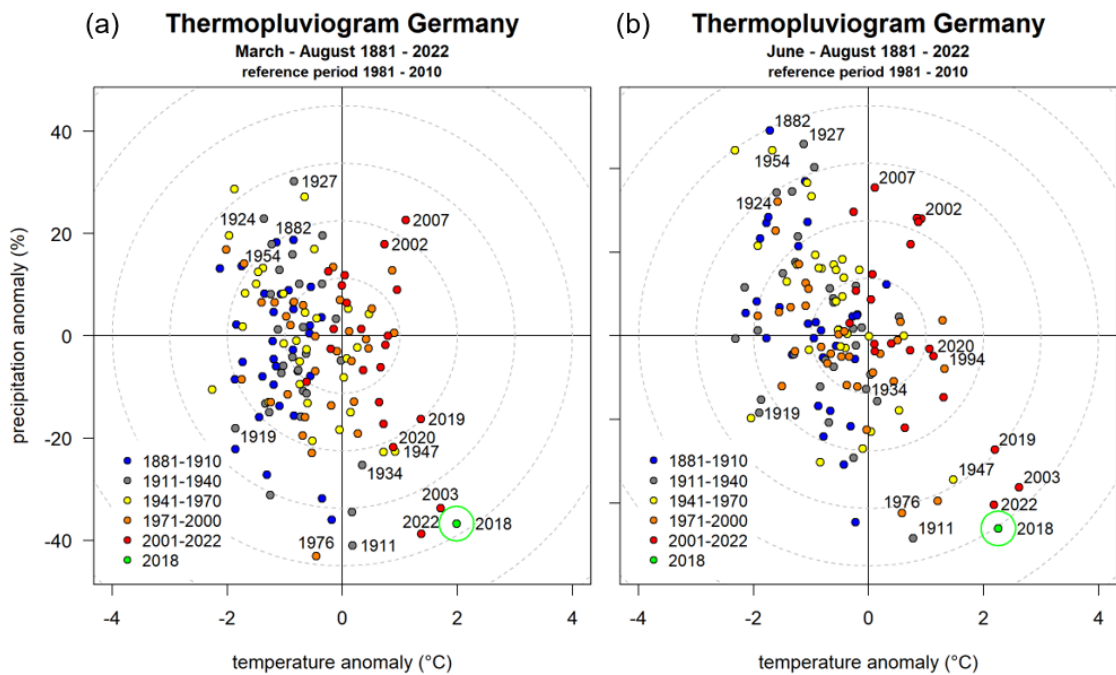
*Supplement of*

## **The extremely hot and dry 2018 summer in central and northern Europe from a multi-faceted weather and climate perspective**

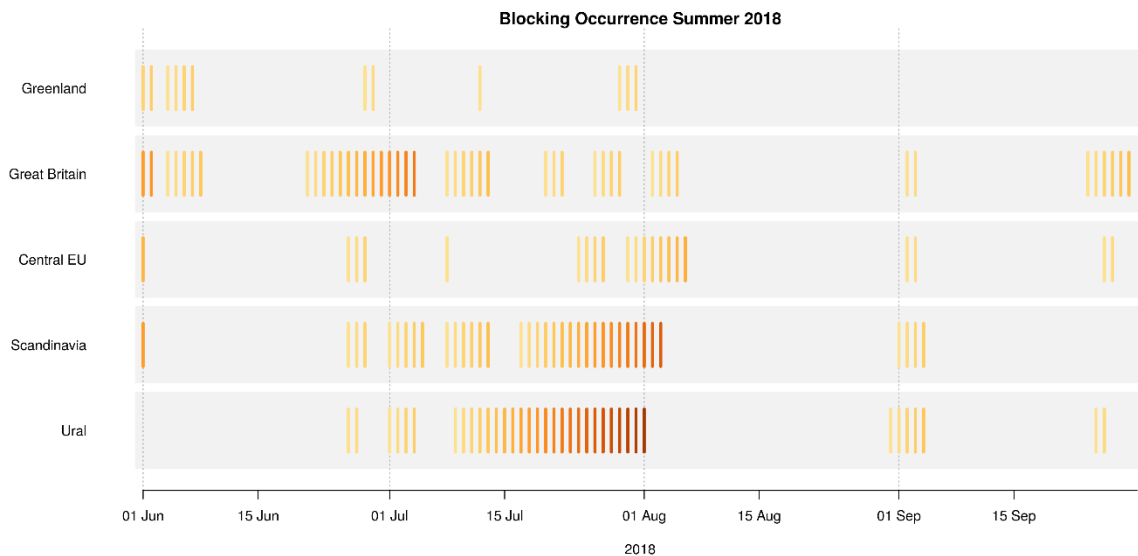
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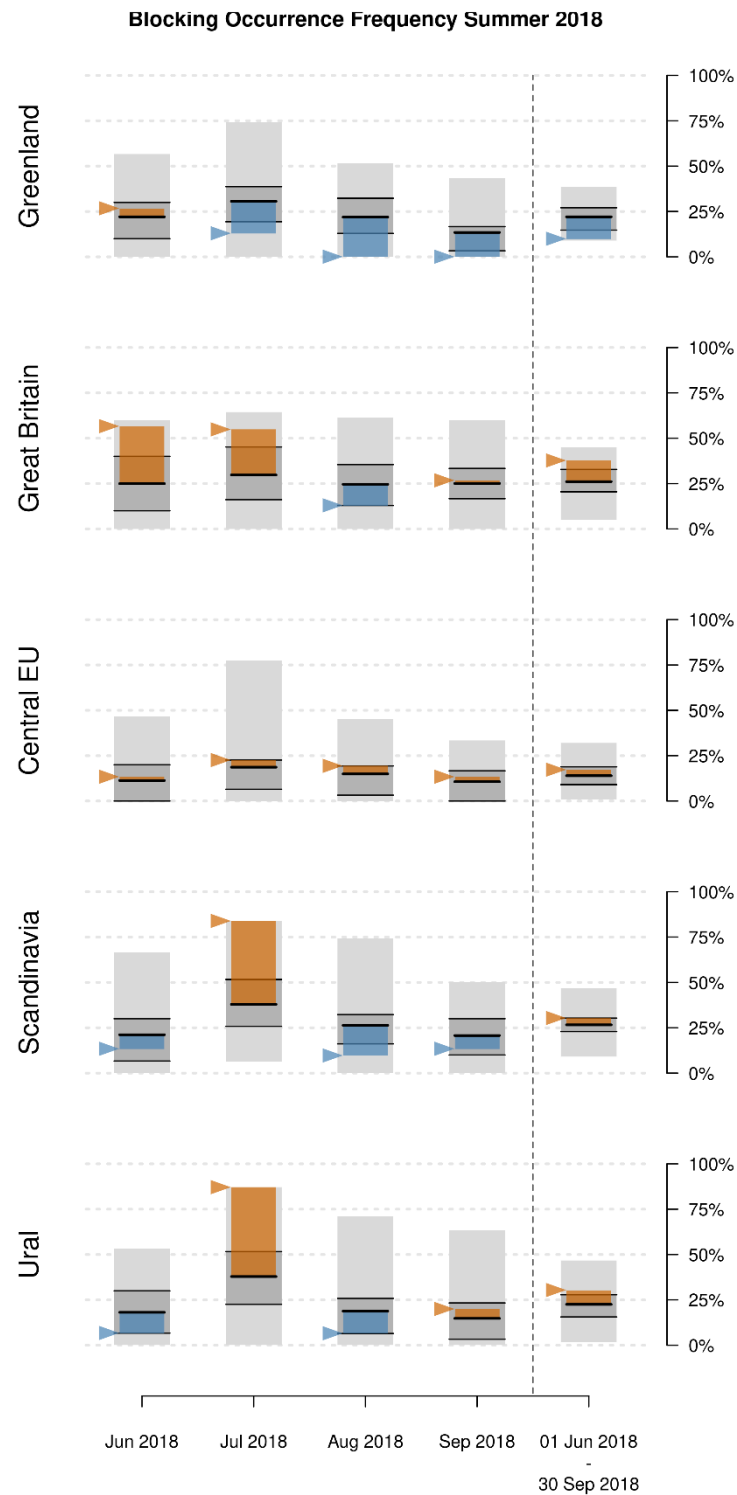


**Figure S1:** Thermopluviogram for Germany for the March – August (a) and for June-August (b). Values of temperature and precipitation anomalies from the climatological mean shown for 30-year periods of 1881-2022 (reference period 1981-2010). 2018 is highlighted with light green color.



**Figure S2:** Daily atmospheric blocking occurrence and duration of consecutive blocked days (colored bars; increasing from orange to red) in different European regions from June to September 2018 in ERA5 reanalysis data. A day is defined as blocked if an area of at least 1

million km<sup>2</sup> of the specific region is blocked based on the 2-dimensional blocking index described in the main article section 2.2.3.



**Figure S3:** Monthly regional blocking frequency (fraction of blocked days) from June to September 2018 (colored bars and arrows) compared to climatological blocking frequencies from 1950 to 2020 in ERA5 reanalysis data. Black horizontal lines indicate the mean, light

(dark) gray bars the minimum and maximum (25% and 75% quantiles) of historical blocking frequencies. Derived blocking frequencies are based on the definition of blocked days given in Figure S2.

**Table S1:** CMIP6 models used for the heatwave attribution over Germany. CMIP source\_id, institution\_id, data versions for the historical and hist-nat simulations, and data citation for the CMIP6/DAMIP simulations used in the attribution study. Where initializations of the same model were using more than one model identifying version, all of them are given and the one that was used for most initializations is marked in bold, where possible.

source_id	institution_id	Versions historical / version hist-nat	Versions hist-nat	Data citation historical	Data citation hist-nat
MRI-ESM2-0	MRI	<b>v20190603</b> v20200327, v20201029	<b>v20190603</b> v20200415	Yukimoto et al., 2019	Yukimoto et al., 2019b
HadGEM3-GC31-LL	MOHC NERC 2016	<b>v20190624</b> v20190626	v20190726, v20190729, v20190730, v20190805	Ridley et al., 2019	Jones, 2019
IPSL-CM6A-LR	IPSL	<b>v20190614</b> v20190802	v20190614	Boucher et al., 2018	Boucher et al., 2018b
ACCESS-ESM1-5	CSIRO	v20191115, v20191128, v20191203, v20200529, v20200601, v20200605, <b>v20200803</b>	v20200615	Ziehn et al., 2019	Ziehn et al., 2020
CNRM-CM6-1	CNRM-CERFACS	v20180917, v20181126, v20190125, <b>v20191004</b> , v20200529	v20190308	Voldoire, 2018	Voldoire, 2019
CanESM5	CCCma	v20190429 / v20190429	v20190429	Swart et al., 2019	Swart et al., 2019b

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