

Supplementary information

Seasonal and regional jet stream changes and drivers

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Supplementary information

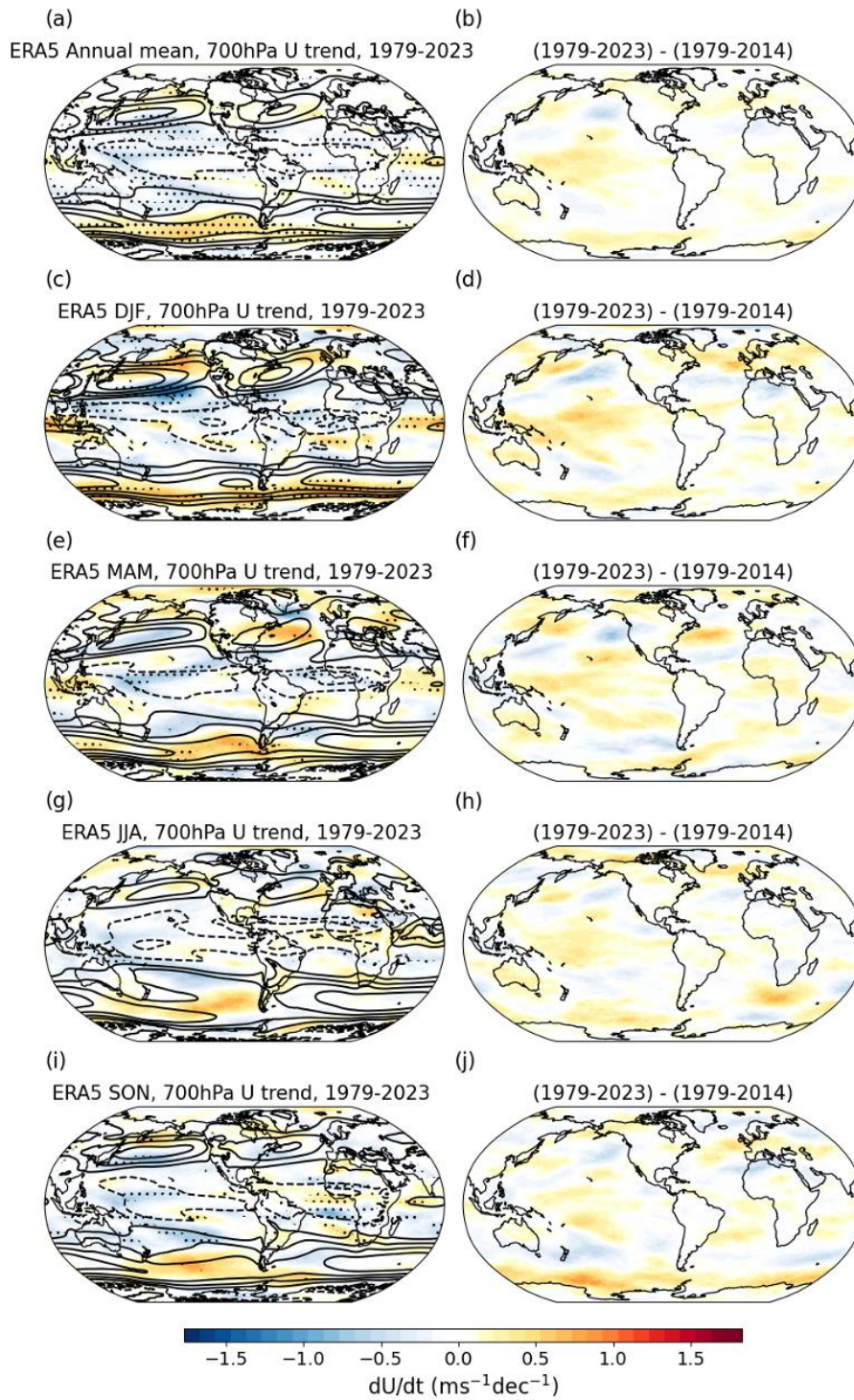
Supplementary Note 1

Our discussion is based on the SSP5-8.5 scenario for the end of the century (2081–2100; Fig. 4). Using a full SSP scenario, as opposed to more idealized experiments such as an instantaneous CO₂ quadrupling or a 1% CO₂ increase per year, makes a mechanistic understanding of the projections more challenging due to the involvement of multiple forcing agents (for example aerosols, CO₂, ozone) whose effects might not be linearly additive. Furthermore, the SSP5-8.5 high-emissions scenario is likely more extreme than what the planet would face given current emission trajectories. Nevertheless, this choice provides a large signal under a semi-realistic scenario, which will complement the description of future drivers of change.

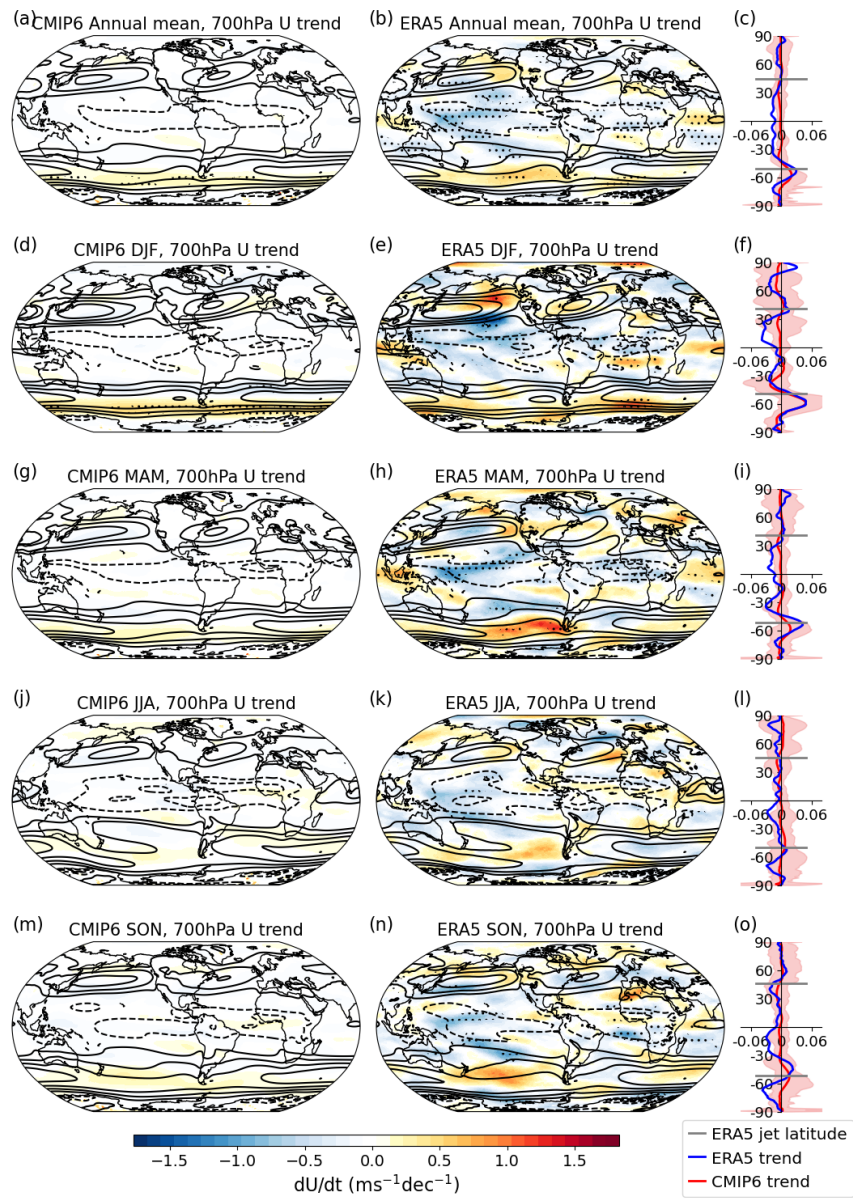
Model	Figs. 1,4	Fig. 5
ACCESS-CM2	X	X
ACCESS-ESM1-5	X	X
AWI-CM-1-1-MR	X	
BCC-CSM2-MR	X	X
BCC-ESM1		X
CAMS-CSM1-0	X	X
CanESM5	X	X
CESM2	X	X
CESM2-FV2		X
CESM2-WACCM	X	X
CESM2-WACCM-FV2		X
CIESM	X	X
CMCC-CM2-SR5	X	X
CMCC-ESM2	X	
CNRM-CM6-1	X	X
CNRM-CM6-1-HR	X	X
CNRM-ESM2-1	X	X
E3SM-1-0		X
EC-Earth3	X	X
EC-Earth3-CC	X	
EC-Earth3-Veg	X	X
EC-Earth3-Veg-LR	X	
FGOALS-f3-L	X	X

FGOALS-g3	X	X
FIO-ESM-2-0	X	X
GFDL-AM4		X
GFDL-CM4	X	X
GFDL-ESM4	X	X
GISS-E2-1-G	X	
GISS-E2-1-H	X	
HadGEM3-GC31-LL	X	X
HadGEM3-GC31-MM	X	X
INM-CM4-8	X	X
INM-CM5-0	X	X
IITM-ESM	X	
IPSL-CM6A-LR	X	X
KACE-1-0-G	X	X
KIOST-ESM	X	X
MIROC6	X	X
MIROC-ES2L	X	
MPI-ESM1-2-HR	X	X
MPI-ESM1-2-LR	X	X
MRI-ESM2-0	X	X
NESM3	X	X
NorCPM1		X
NorESM2-LM	X	X
NorESM2-MM	X	
SAM0-UNICON		X
TaiESM1	X	X
UKESM1-0-LL	X	X
UKESM1-1-LL		X

Supplementary Table 1: Models used to create Figs. 1, 2 and 4. All figures are created from 43 models; owing to data availability, the model sets are not identical, but have an overlap of 34 models.



Supplementary Figure 1: **(Left)** As in Fig. 5 (middle) but for the time period 1979-2023. **(Right)** The difference in trend between 1979-2023 and 1979-2014.



Supplementary Figure 2: As in Fig. 5, but for the CMIP6 historical simulations instead of AMIP.