



## Supplemental Material

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**Evaluation of CMIP5 Earth System Models for the Spatial Patterns of Biomass and Soil****Carbon Turnover Times and Their Linkage with Climate**

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## Introduction

This supplementary materials provide additional information mainly regarding the spatial patterns of biomass and soil carbon turnover time derived with models, spatial sensitivity of modeled biomass and soil carbon turnover time to temperature (T) and precipitation (P), and uncertainty analysis, including comparing carbon turnover time results using other data sources, and verifying the steady state assumption with CMIP5 outputs.

**Table S1** Summary of CMIP5 ESMs used in this study, including model name, coupled atmosphere model, coupled land model, nitrogen cycle (N), land use change (LUC) and fire.

**Figure S1** Global biome map constructed from the Moderate Resolution Imaging Spectroradiometer (MODIS) International Geosphere-Biosphere Program (IGBP) land-cover map referred to Todd-Brown et al. (2013).

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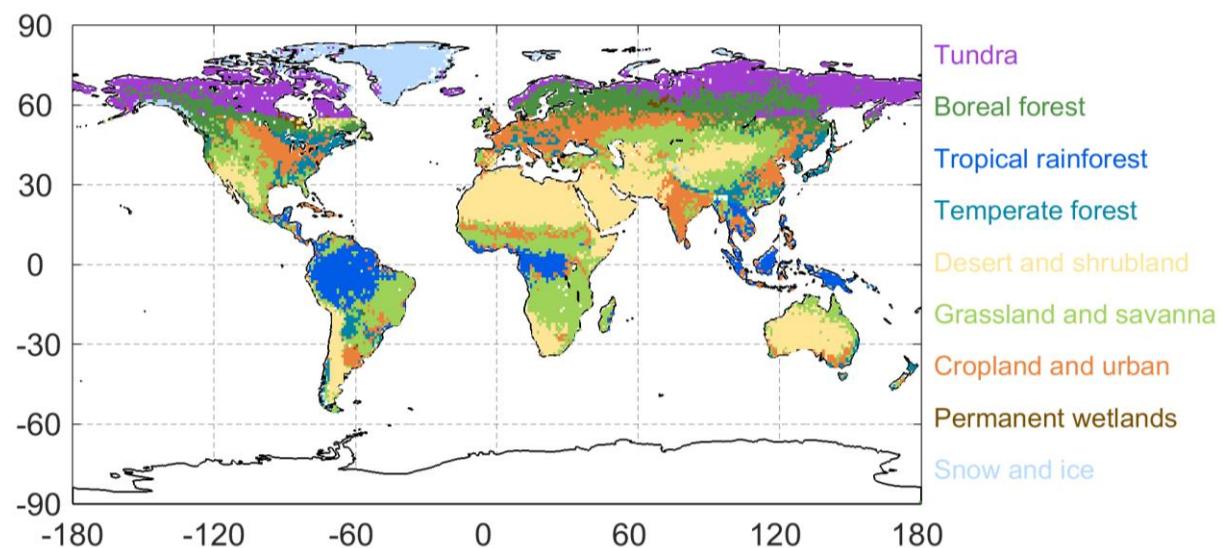
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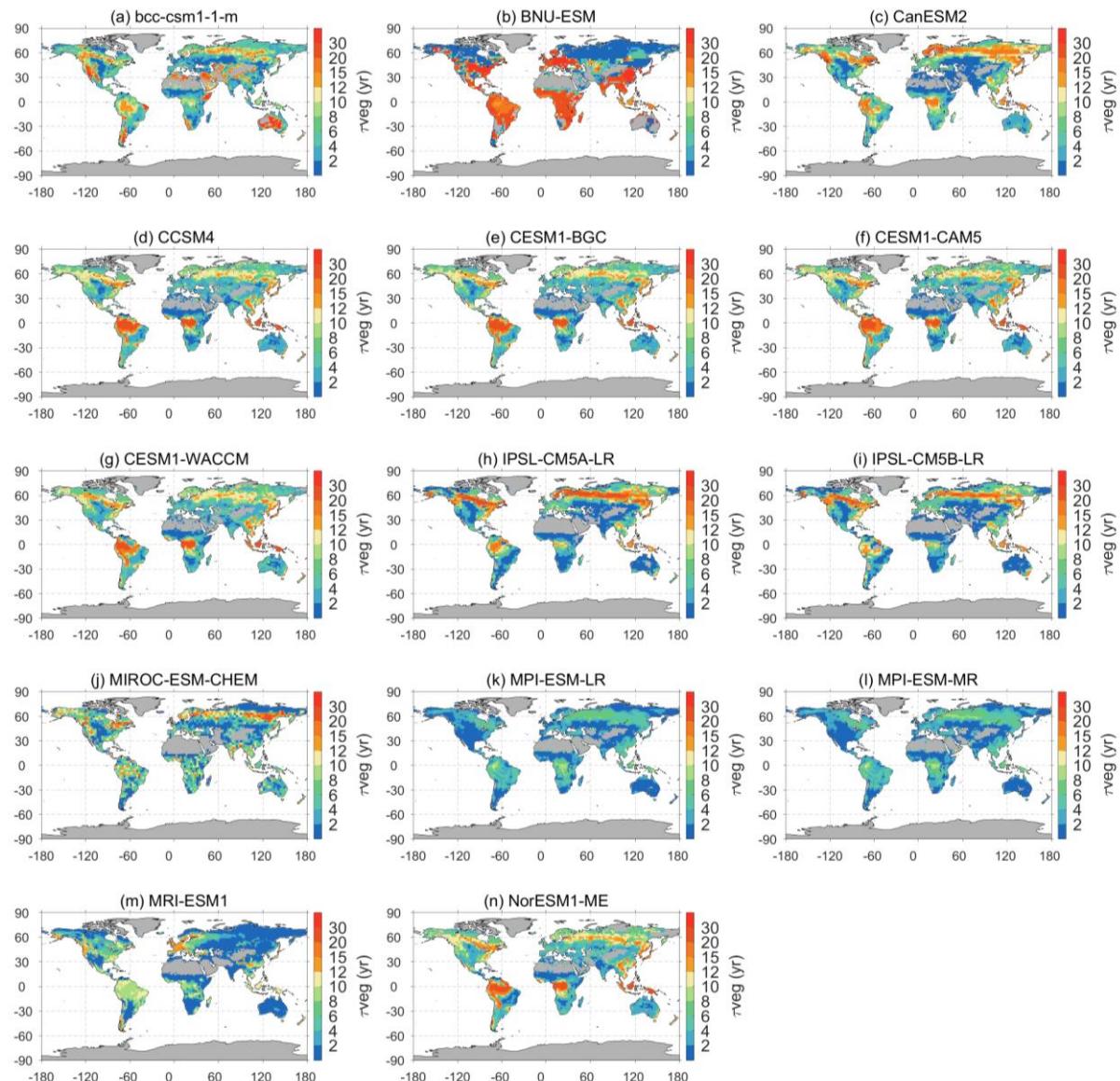
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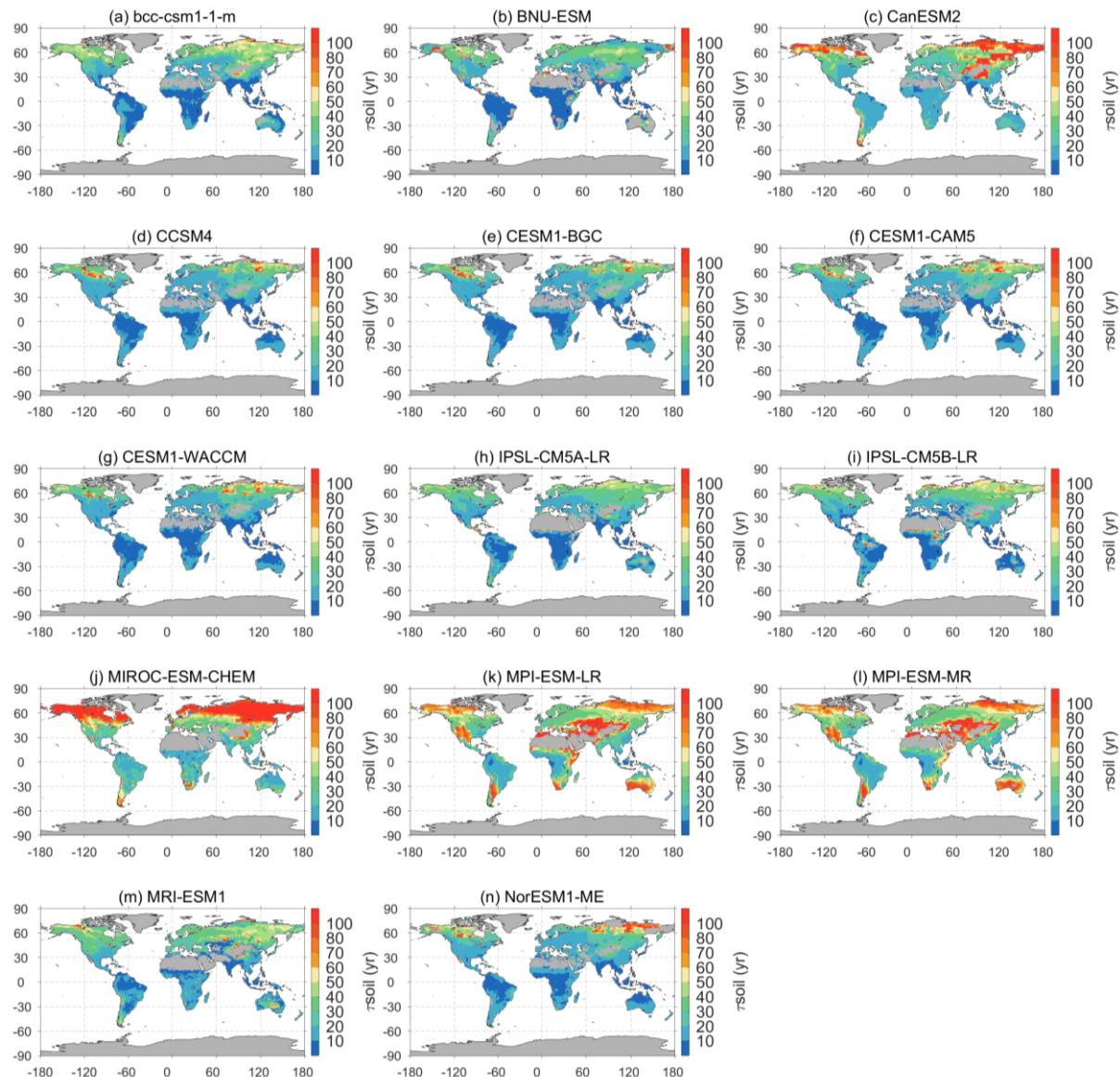
Model Name	Atmosphere	Land	N	LUC	Fire
BCC_CSM1.1(m)	BCC_AGCM2.1	BCC-AVIM1.0	No	No	No
BNU-ESM	CAM3.5	CoLM+B-NUDGVM	No	Yes	No
CanESM2	CanAM4	CLASS 2.7; CTEM	No	Yes	No
CCSM4	CAM4	CLM4	Yes	Yes	Yes
CESM1(BGC)	CAM4	CLM4	Yes	Yes	Yes
CESM1(CAM5)	CAM5	CLM4	Yes	Yes	Yes
CESM1(WACCM)	WACCM4	CLM4	Yes	Yes	Yes
IPSL-CM5A-LR	LMDZ5	ORCHIDEE	No	Yes	Yes
IPSL-CM5B-LR	LMDZ5	ORCHIDEE	No	Yes	Yes
MIROC-ESM-CHEM	MIROC-AGCM	MATSIRO	No	Yes	No
MPI-ESM-LR	ECHAM6	JSBACH	No	Yes	Yes
MPI-ESM-MR	ECHAM6	JSBACH	No	Yes	Yes
MRI-ESM1	MRI-AGCM3.3	HAL	No	No	No
NorESM1-ME	CAM4-Oslo	CLM4	Yes	Yes	Yes



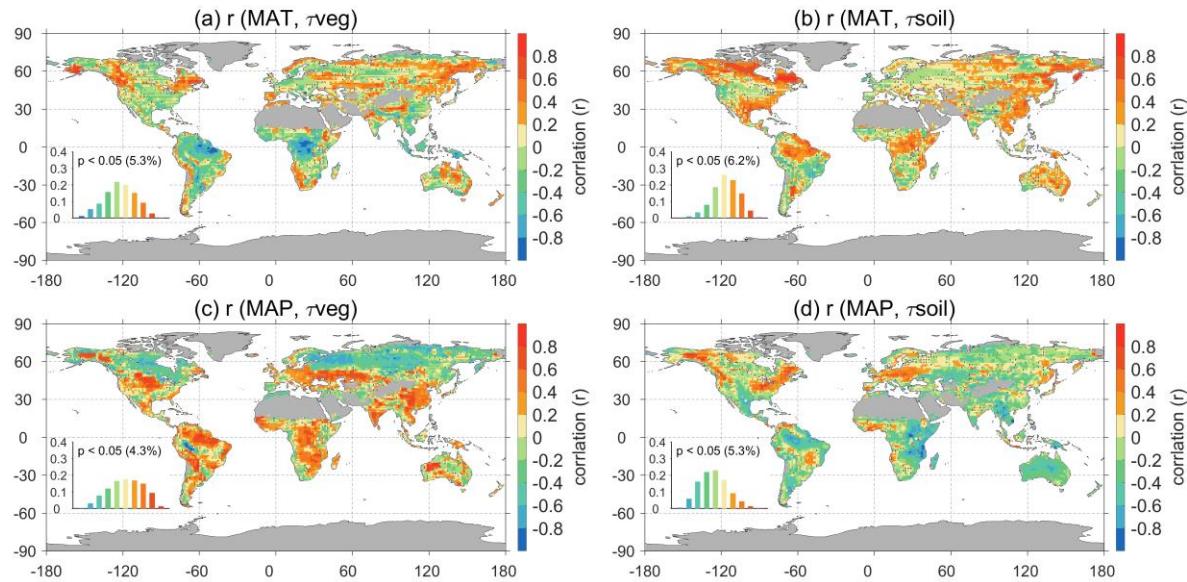
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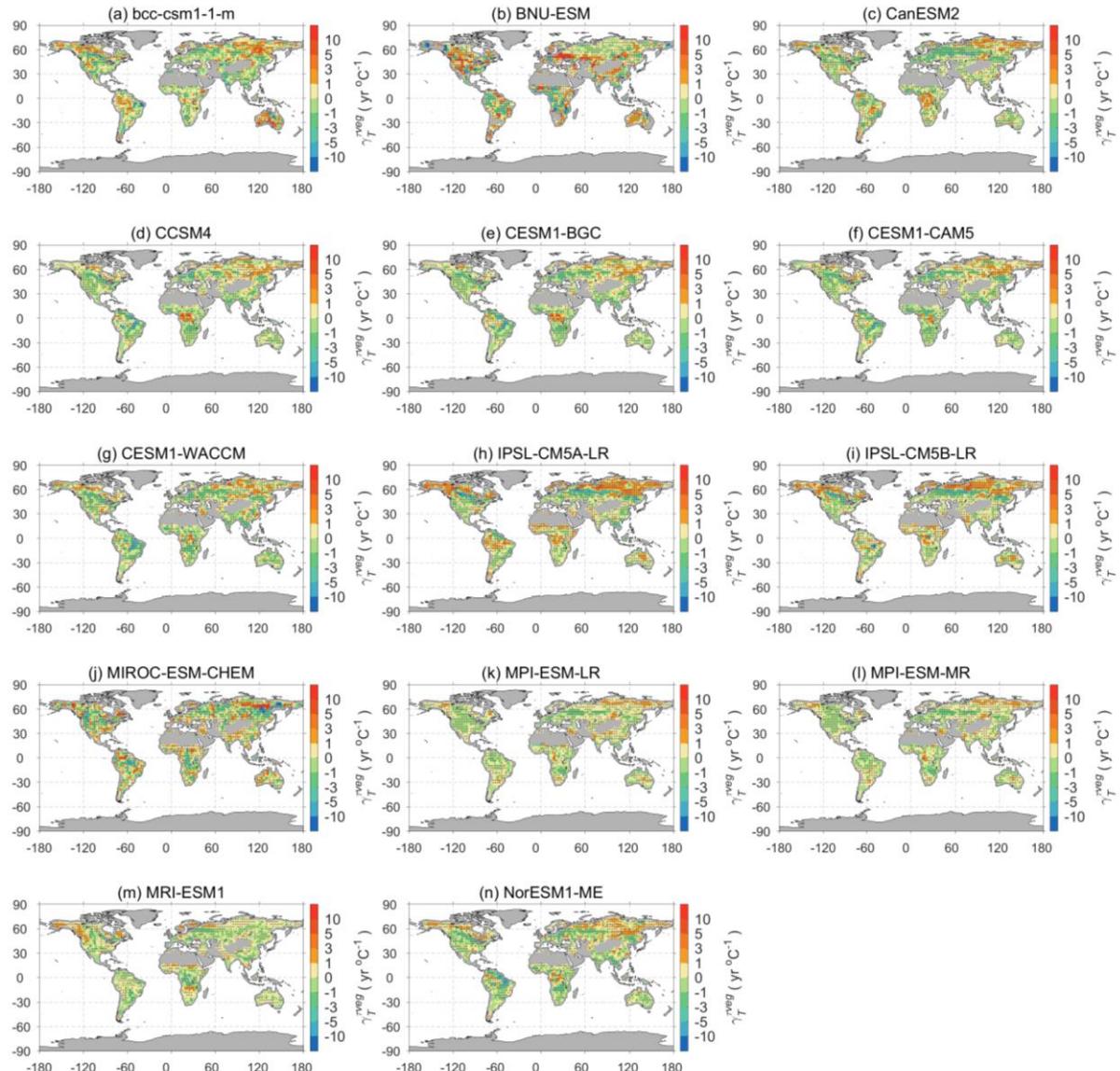
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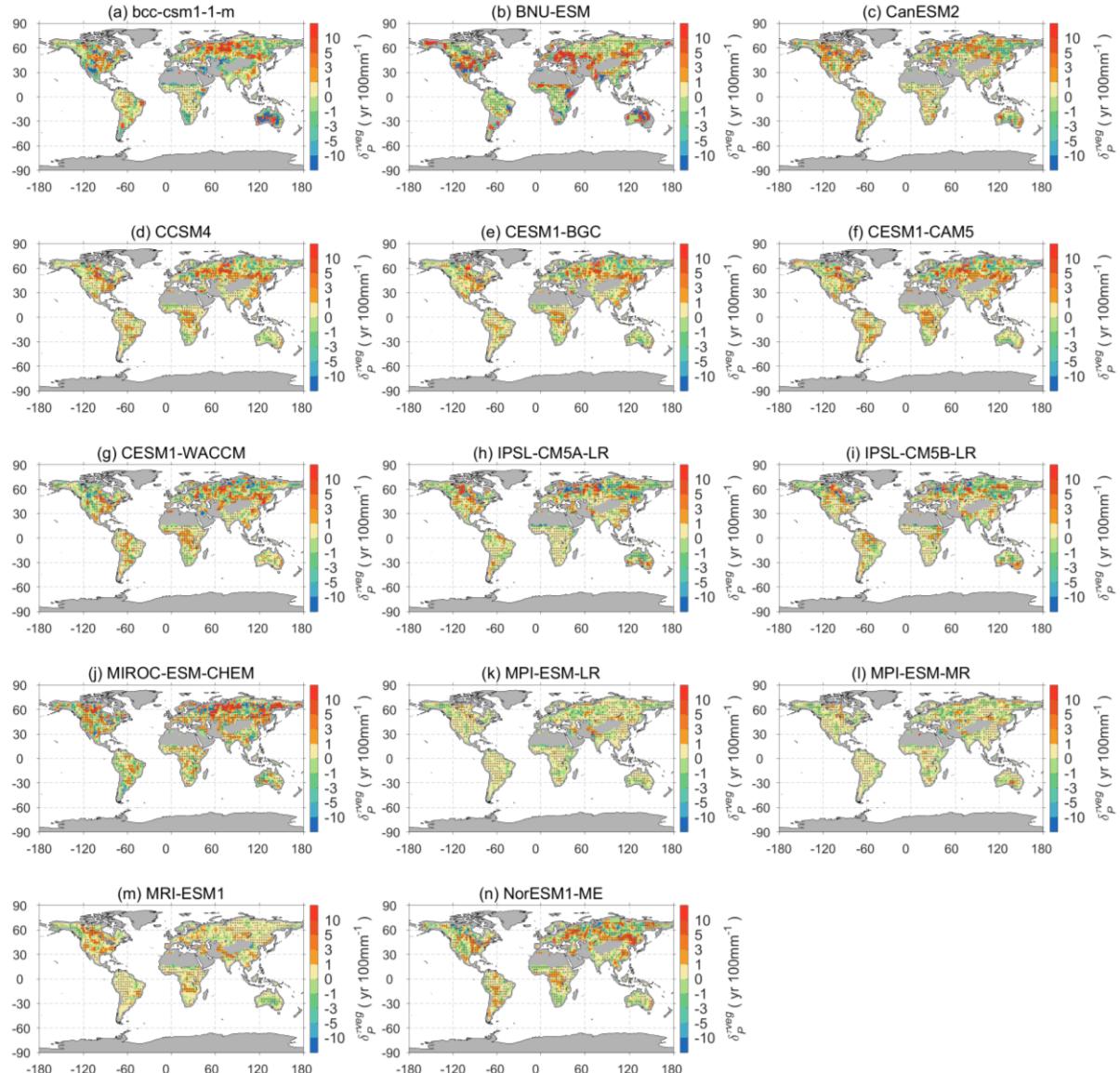


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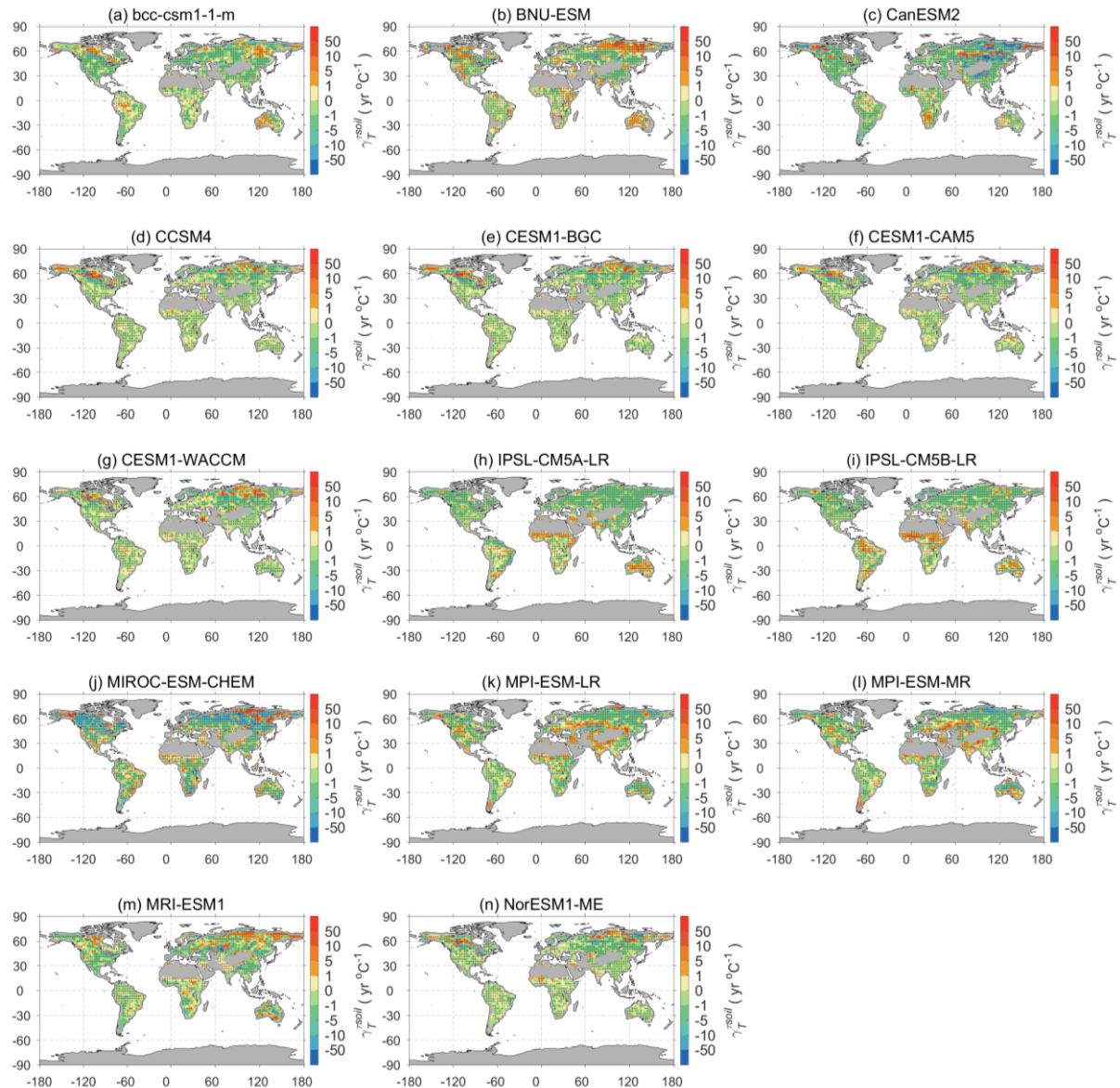
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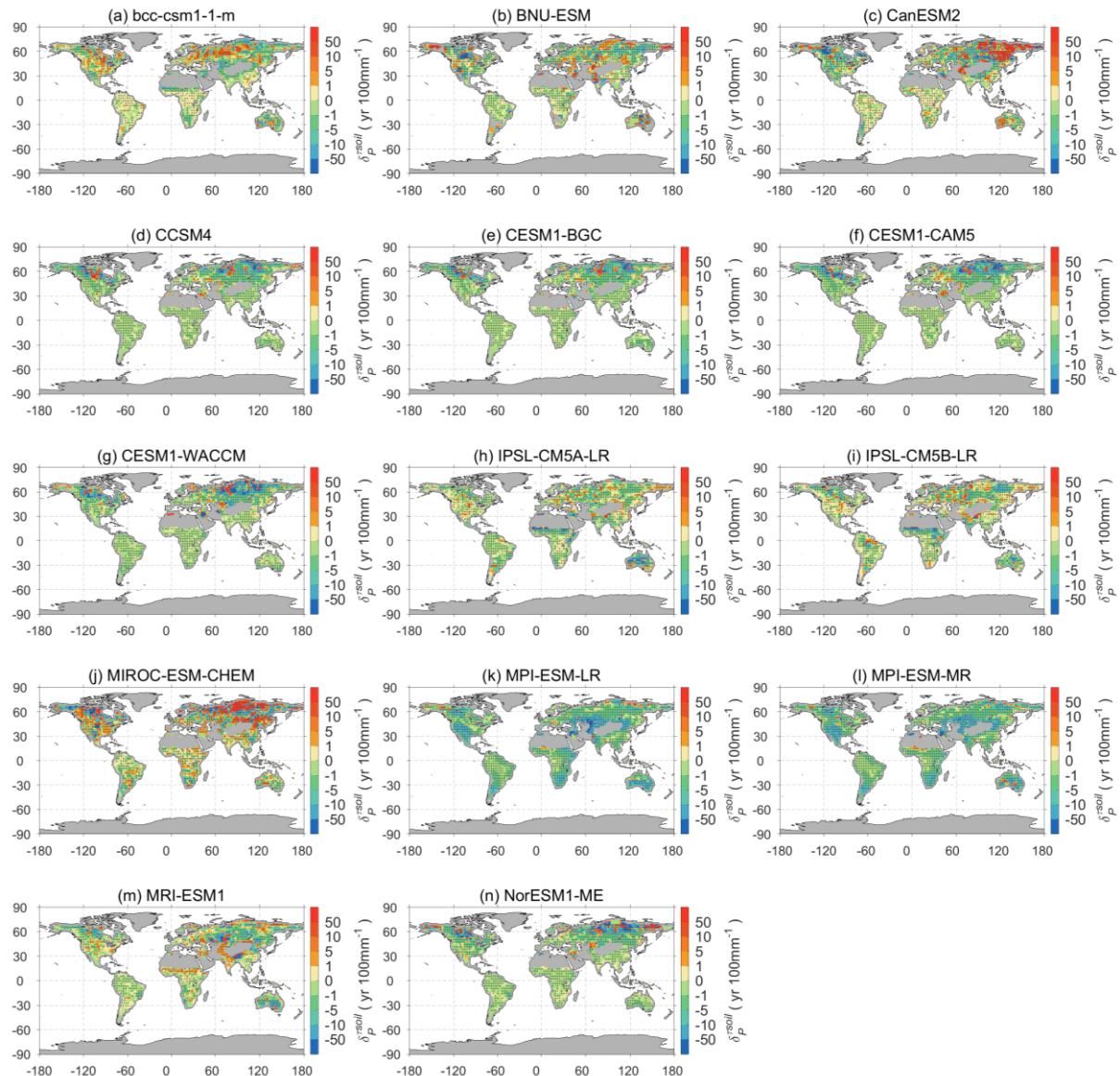


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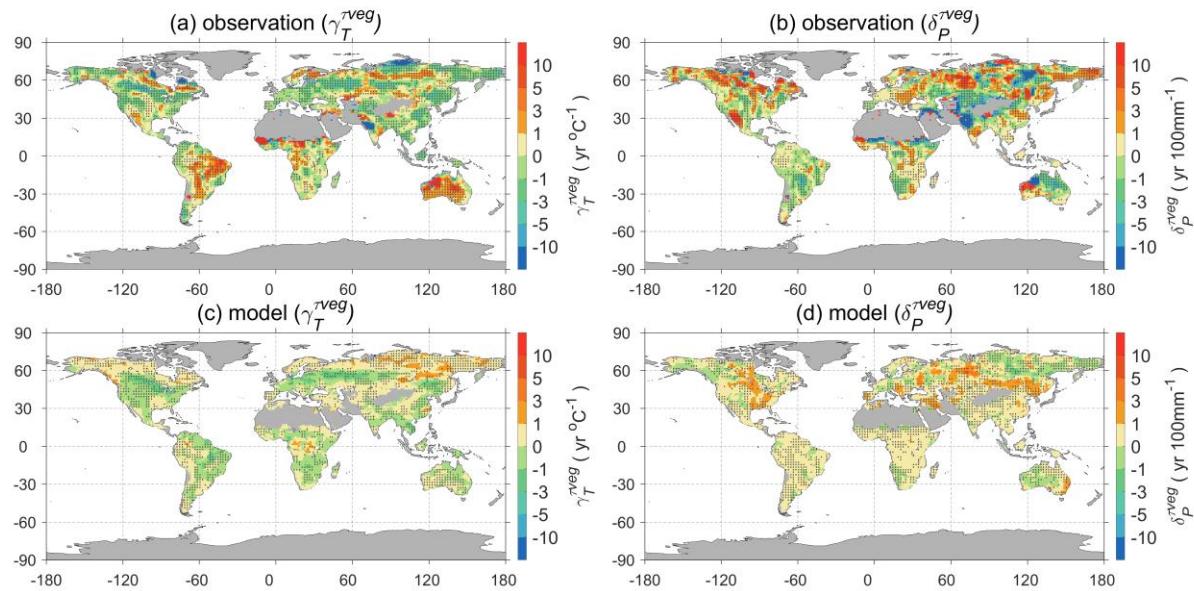
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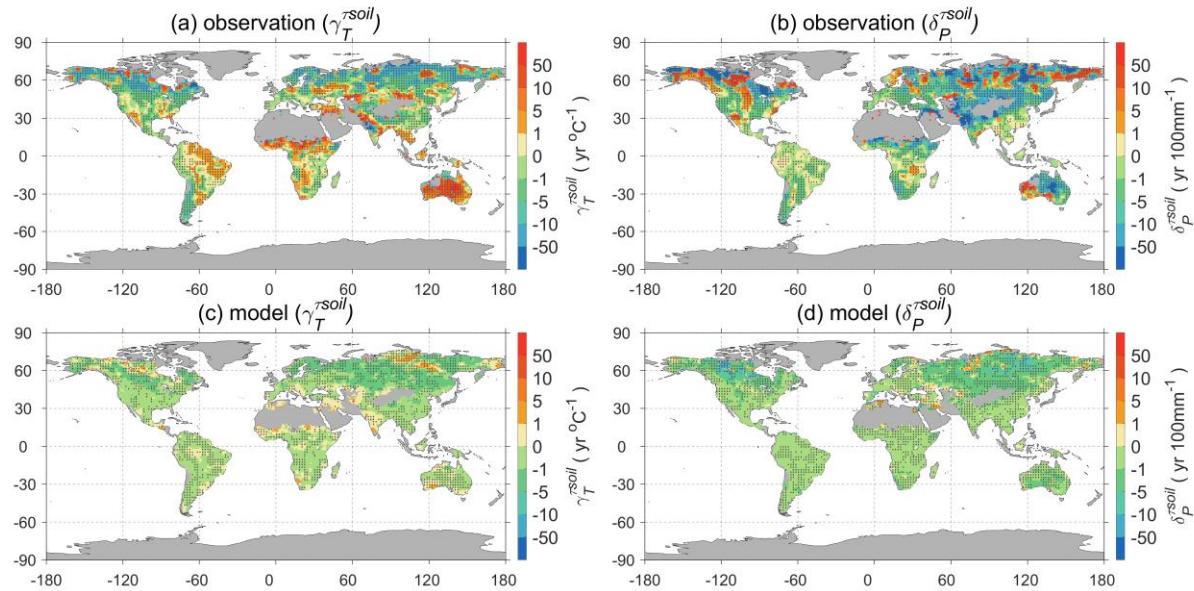
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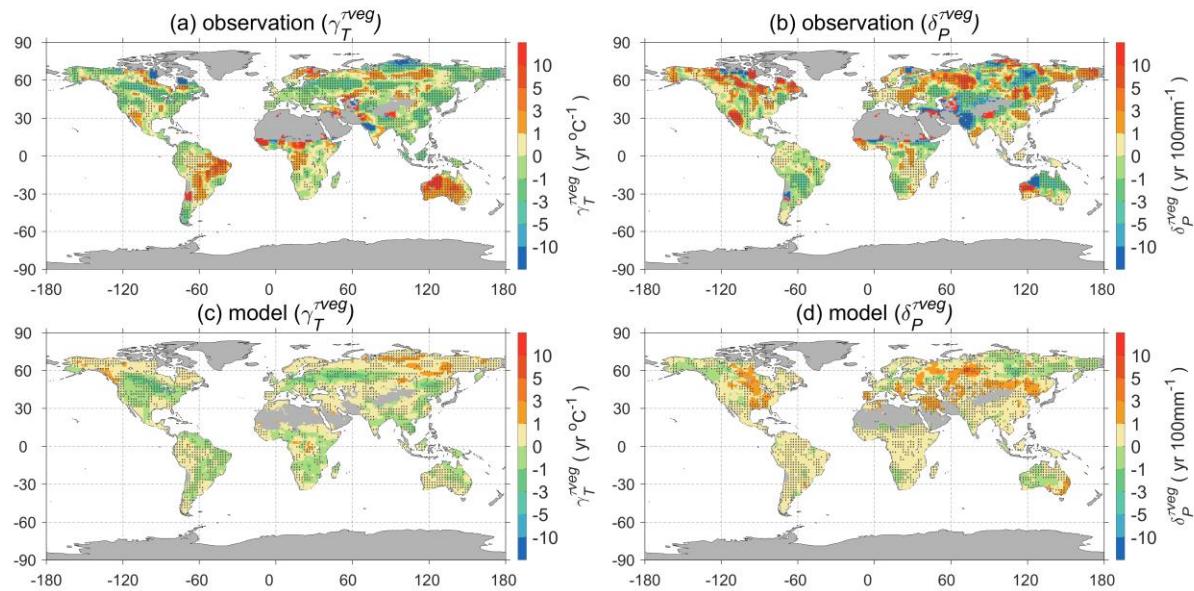
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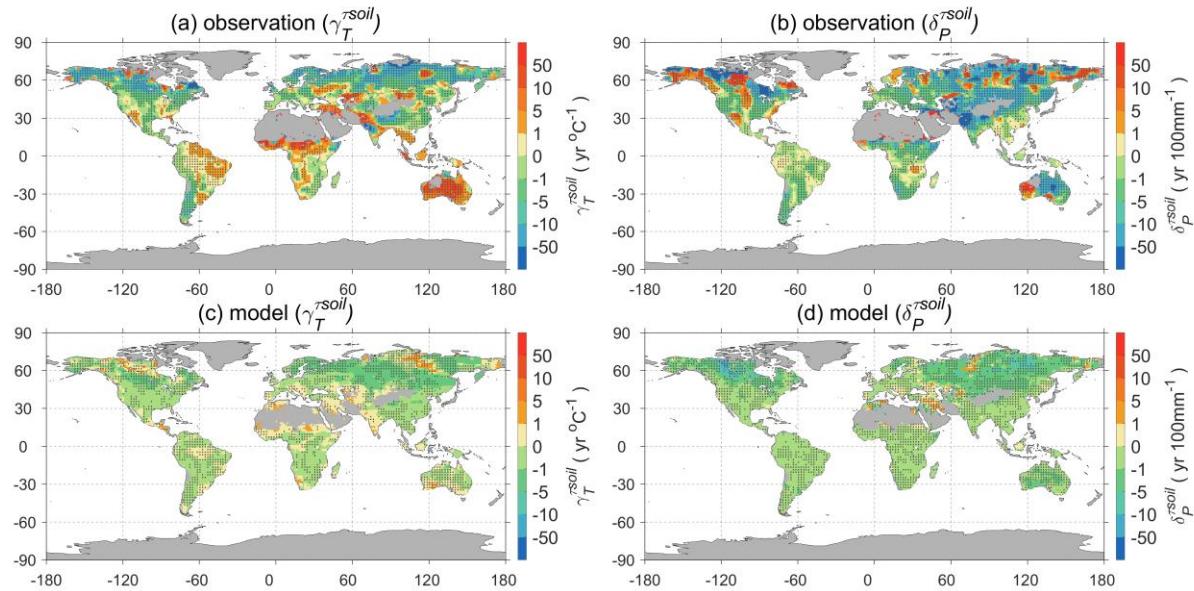
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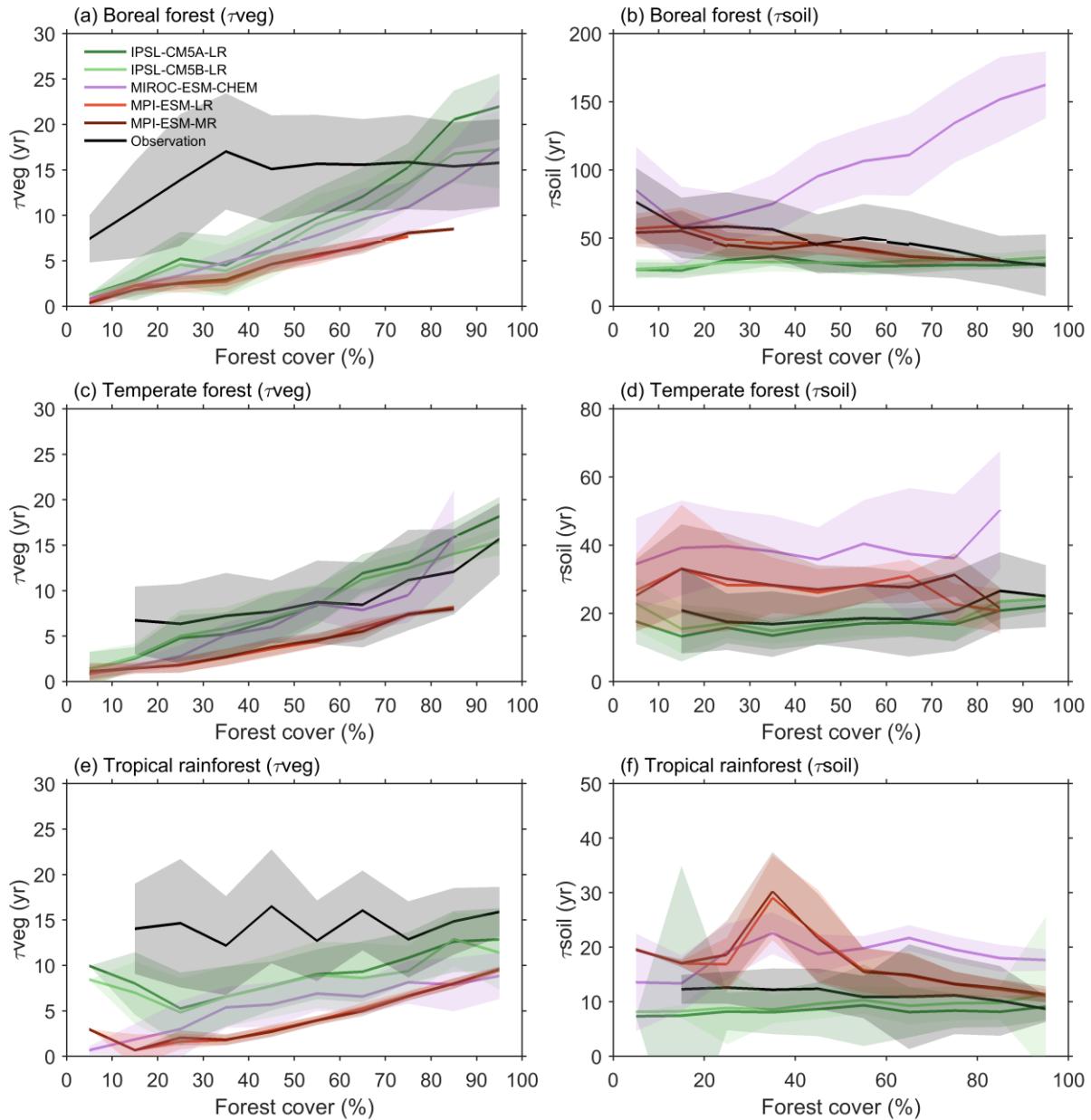
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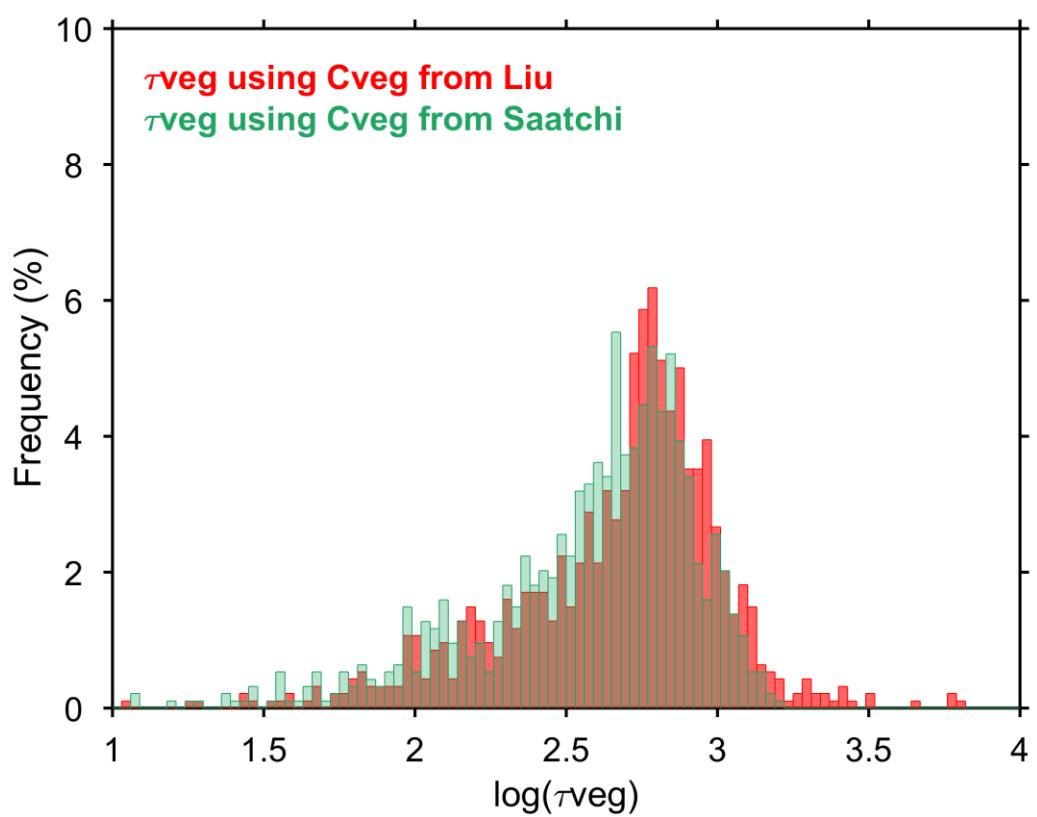
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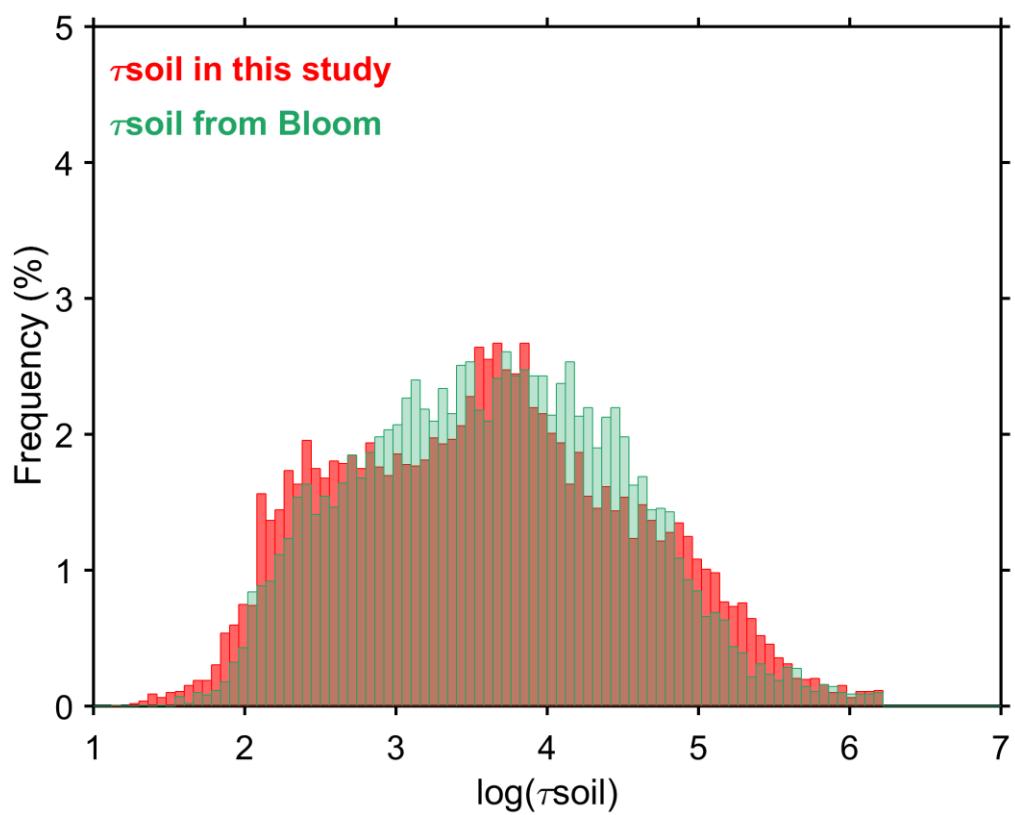
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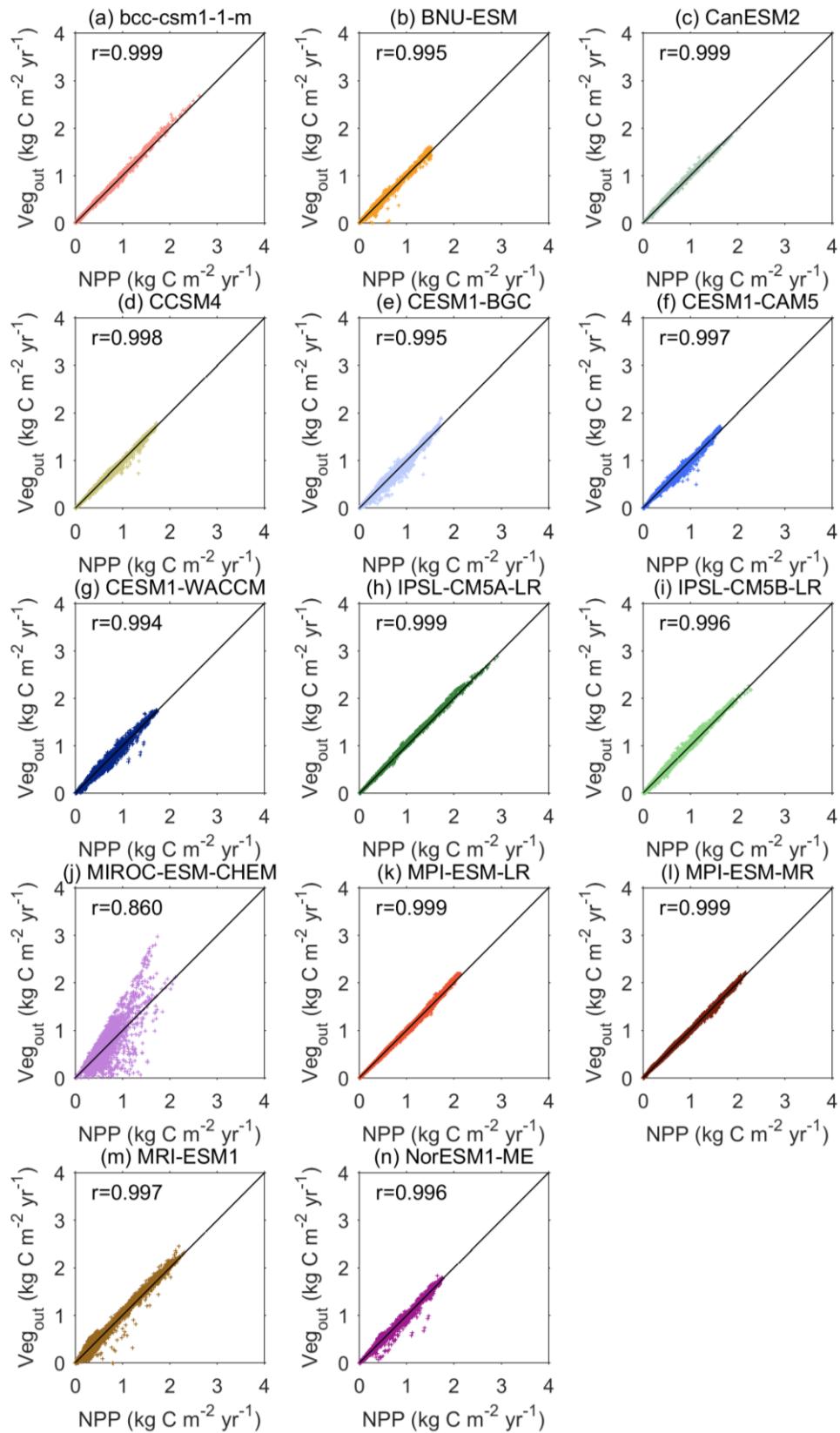
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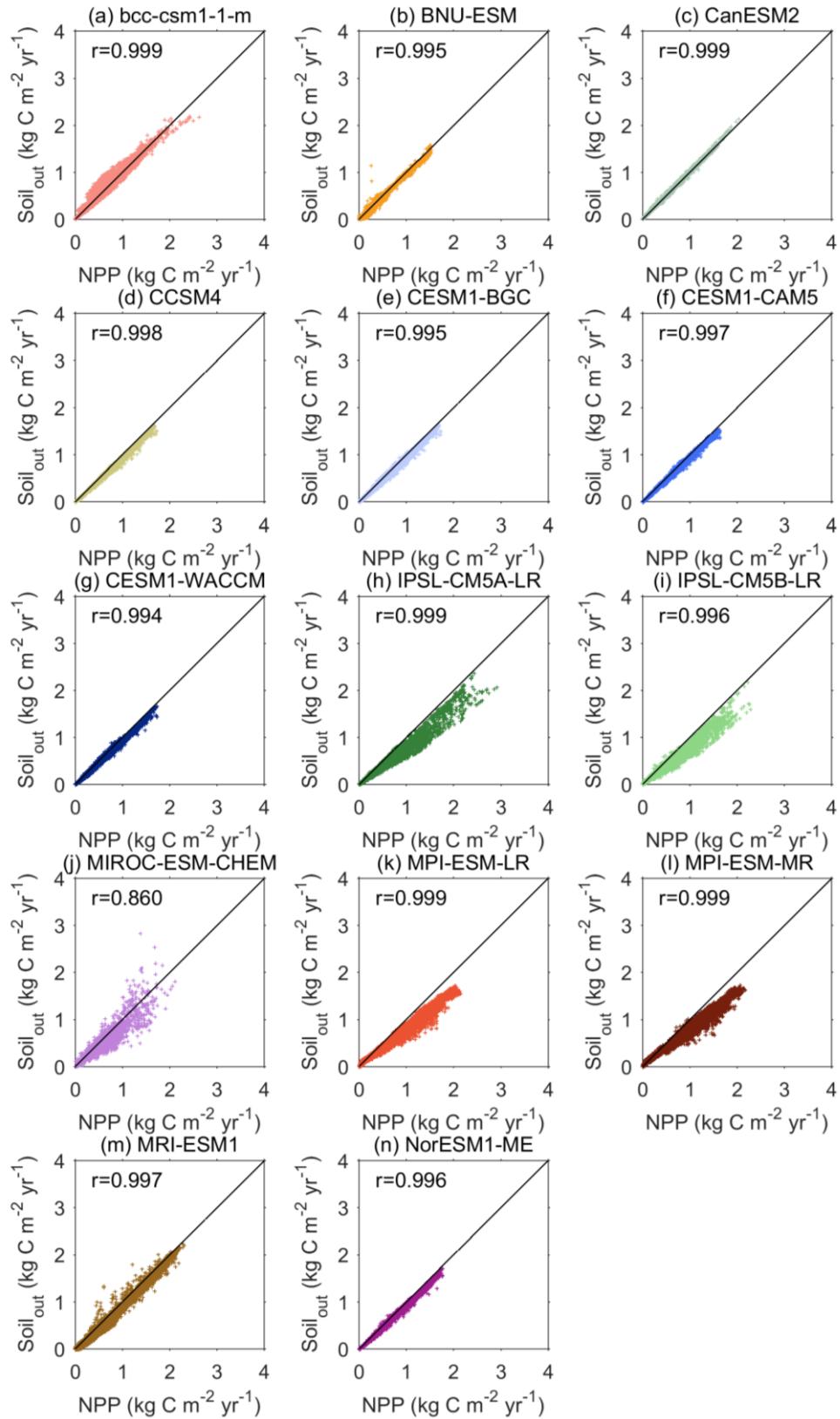
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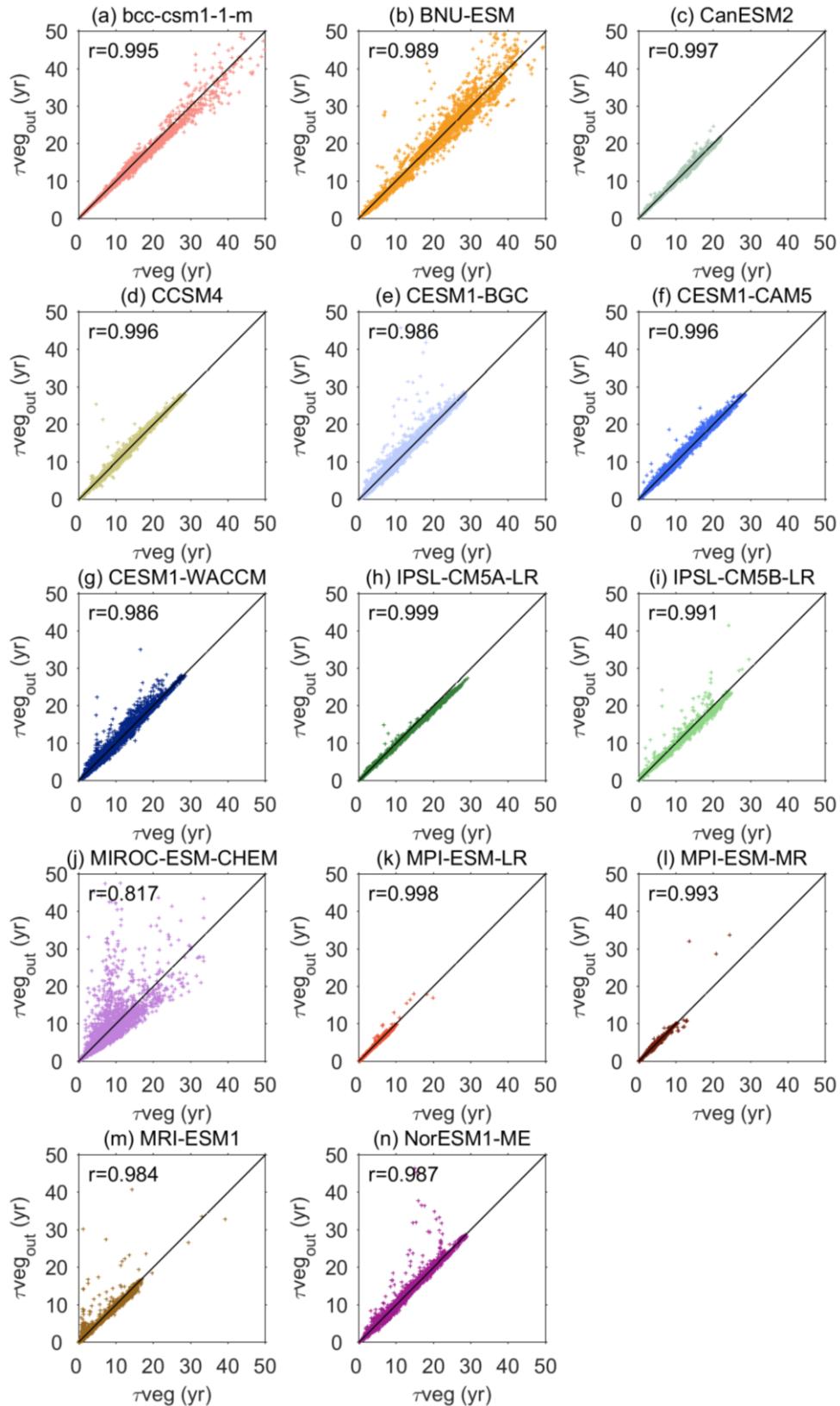
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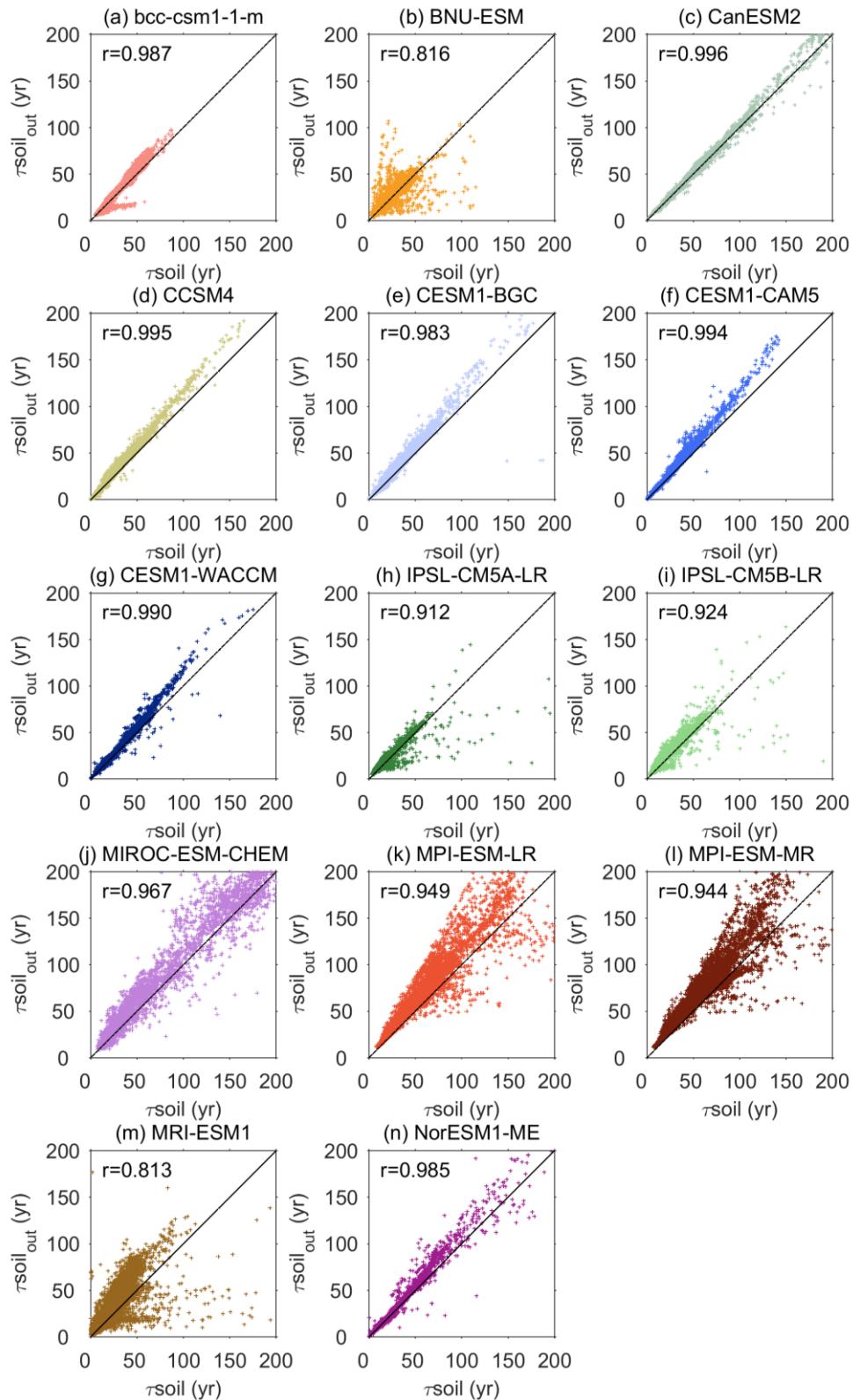
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