I-GEM Kickoff meeting

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Rain and Snow in CESM

- In CESM, we used combine precipitation rather than separated rain and snow
- The freezing point in GPCC was 274.15K, while in CESM, we use 273.15K, thus we add one degree while reading the input precipitation
- Two approach for CESM precipitation
- Linear fraction between 274.15K and 275.15K
 - Rain =prec*frac
 - Snow=prec*(1-frac)













 $\tfrac{std}{mean}{=}31.643035\%$

Comparison for Precipitation

- ORCHIDEE and SURFEX has pretty similar results, and the difference can be neglectable
- The difference between CESM/CLM was pretty large
- In CESM, we filling the Antarctica area with nearest valid points

Current progress

- Control run has been done
- Qforce should be figured out
- How to make sure the soil moisture to be saturated under water table depth are still working



Land Sea mask

- Three models all have different land sea mask
 - ORCHIDEE has no Antarctica also no island in Pacific
 - SURFEX has Antarctica, also some of the island in Pacific
 - CESM using the area fraction and PFT, so we can have data in some of the lake and sea area



CESM





Input



Current received data

SURFEX	ORCHIDEE
LWdown	DelSurfHeat
Qdis	DelSurfStor
SWdown	Dis
SWE	gpp
	humrel
	nobiofrac
	PFTfrac
	Qb
	SWE
	water2infilt

- ORCHIDEE
 Control run only
- SURFEX
 - Control
 - zwt=0.5, 1, 2, 3, 5, 8, 10
 - Missing data in zwt=2 experiment

Z=3m



Soil Moisture (m³/m³)