

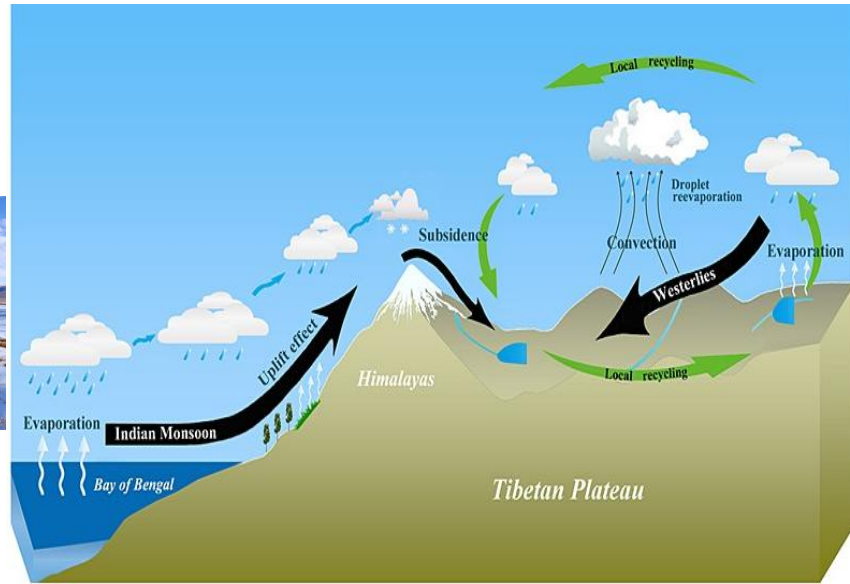
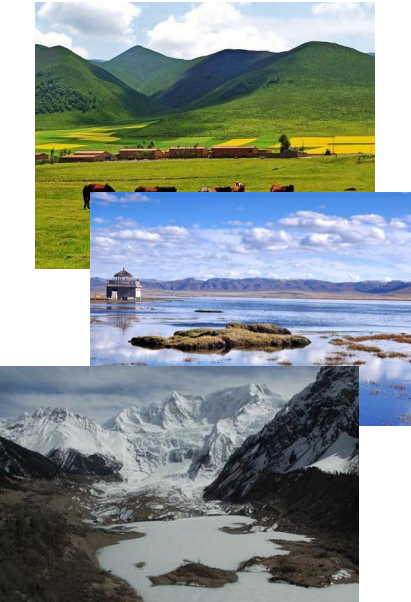
Detecting evapotranspiration biases in reanalyses and regional climate modeling

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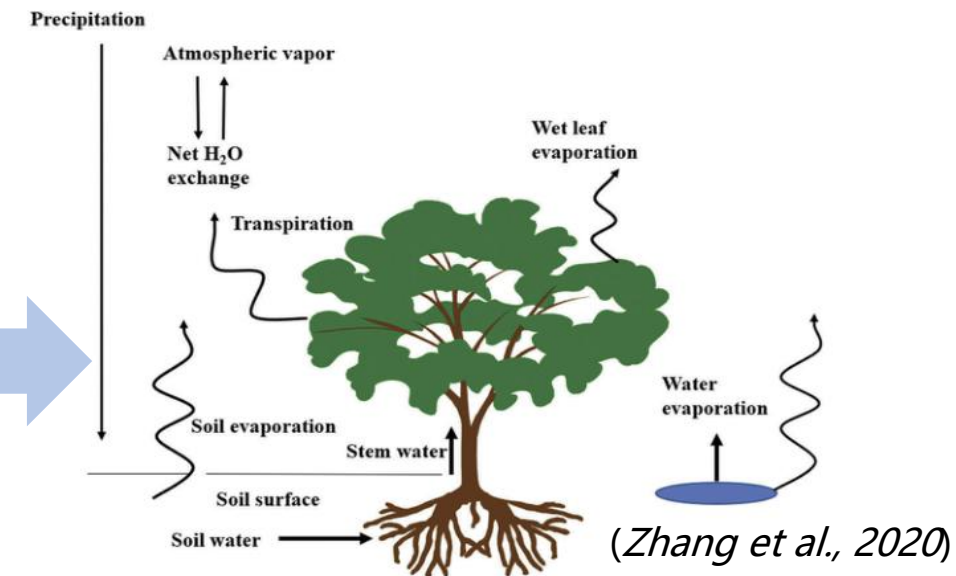
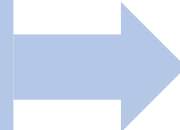
Background



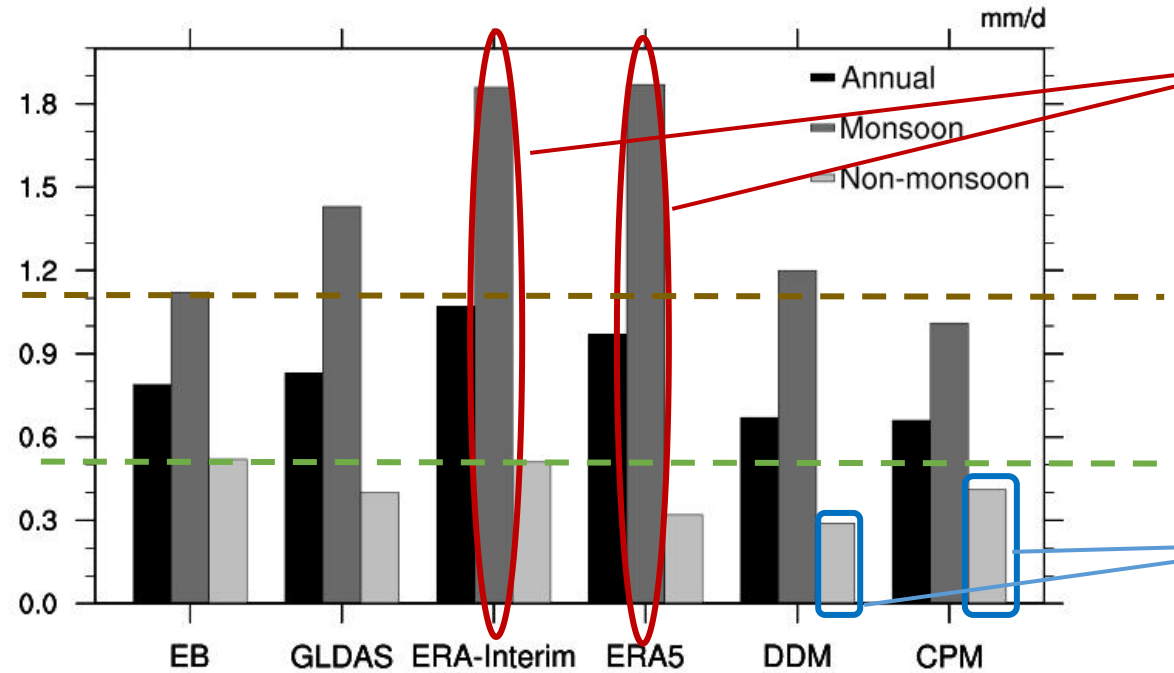
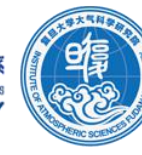
(Yao et al., 2013)

Tibetan Plateau:
“Third Pole”, “Asian Water Tower”, Unique land surfaces

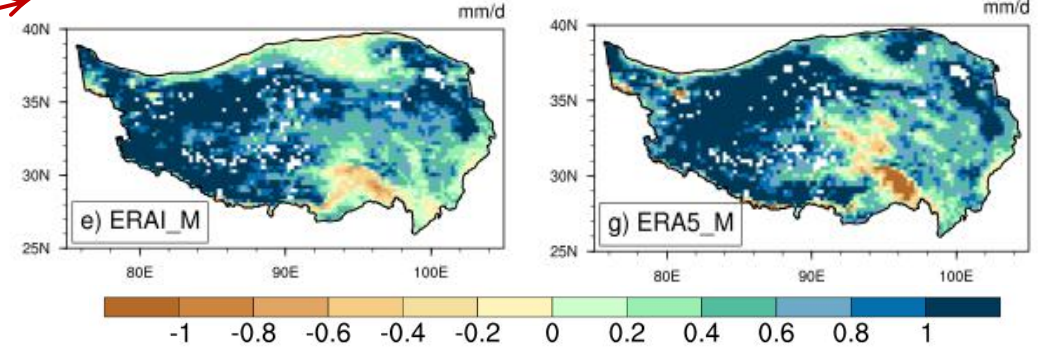
Terrestrial Evapotranspiration:
transpose 60% land precipitation worldwide (Oki and Kanae, 2006), consume 50% solar energy absorbed by land surfaces (Trenberth et al., 2009)



Annual/Seasonal mean of the evapotranspiration and its biases

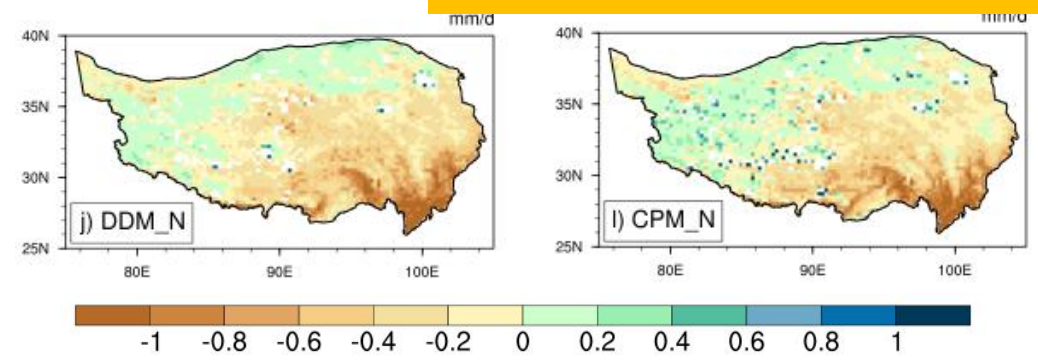


Monsoon:



nearly the whole TP

Non-Monsoon:



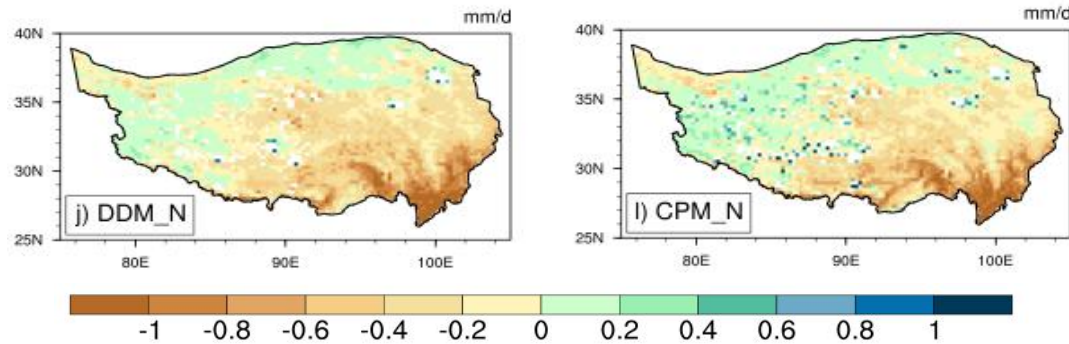
the eastern and central TP

- The two reanalysis greatly overestimate evapotranspiration in the monsoon season.
- The DDM and CPM do well in the monsoon season but underestimate in the non-monsoon season.

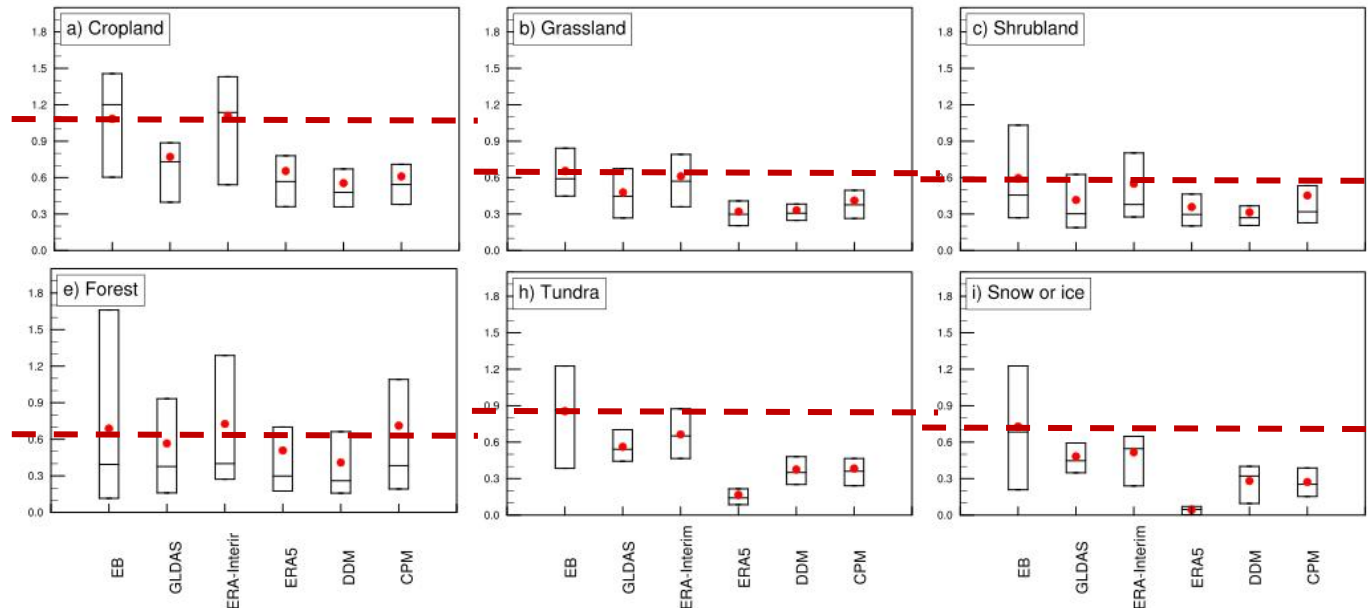
Evapotranspiration over dominant land use categories



Non-Monsoon:



Land Use Category	Land Use Description	USGS
1	Cropland	2-6
2	Grassland	7
3	Shrubland	8
4	Mixed Shrubland/Grassland	9-10
5	Forest	11-15
6	Water Bodies	16
7	Wetland	17-18
8	Barren or Sparsely Vegetated	19
9	Tundra	20-23
10	Snow or Ice	24



- Lower evapotranspiration for DDM and CPM mainly exist in the vegetated land.
- The underestimation for tundra and snow/ice are still problems

Thank you for your attention!

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