The intraseasonal variability of the East Asian Summer Monsoon simulated by SP-CCSM4

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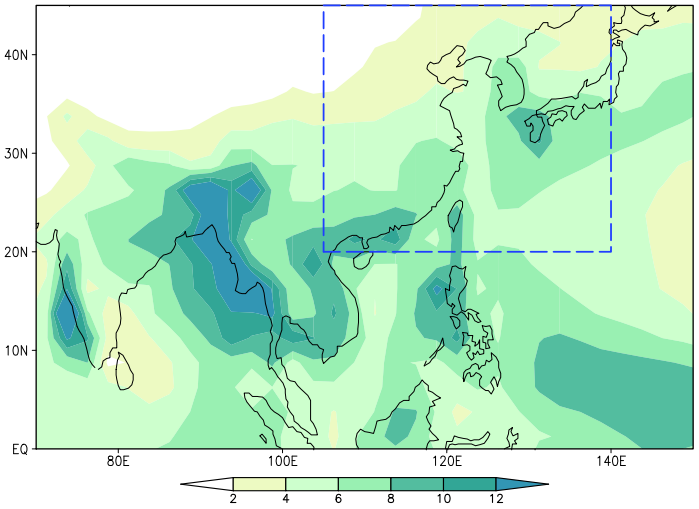
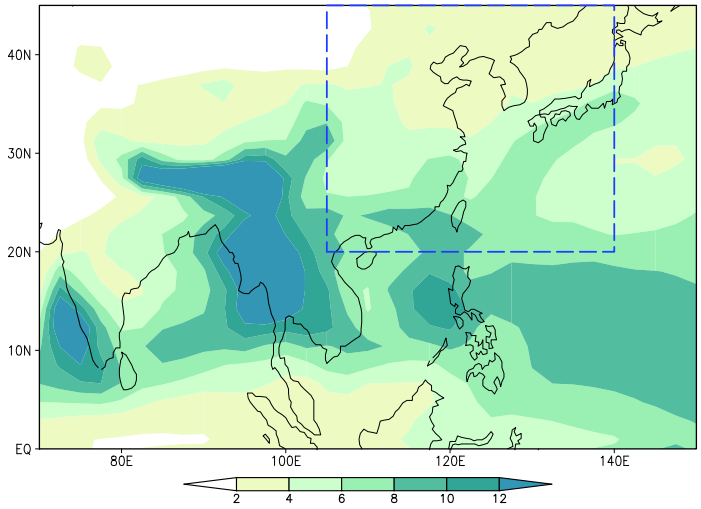
EASM Mean State

MJJA Climatology

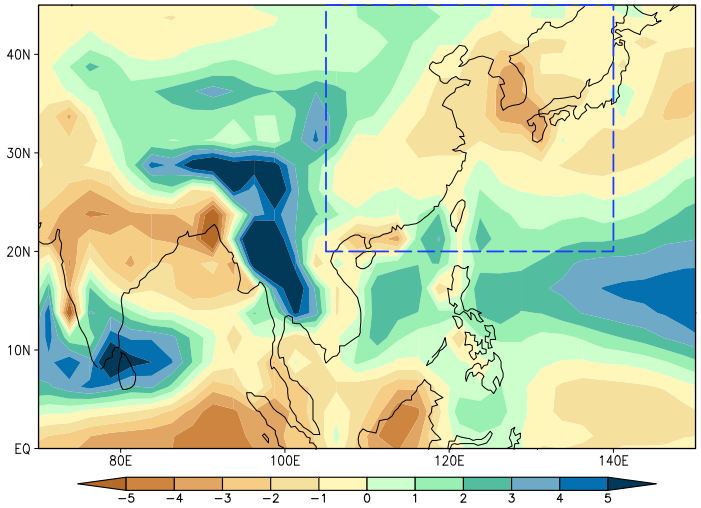
GPCP



SP-CCSM4

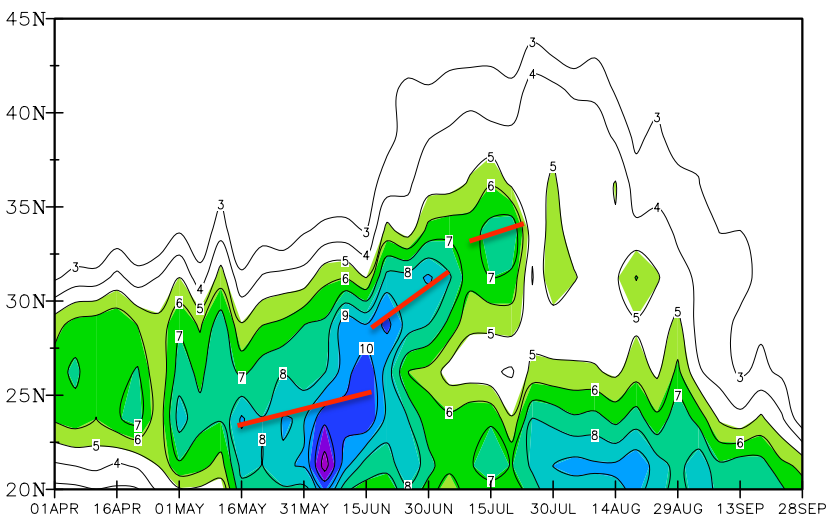


Model-OBS

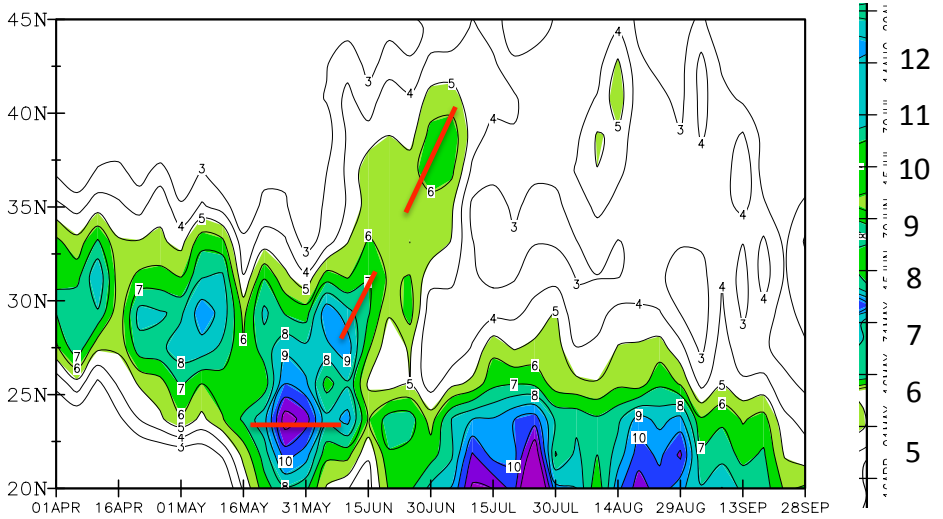


EASM Annual Cycle

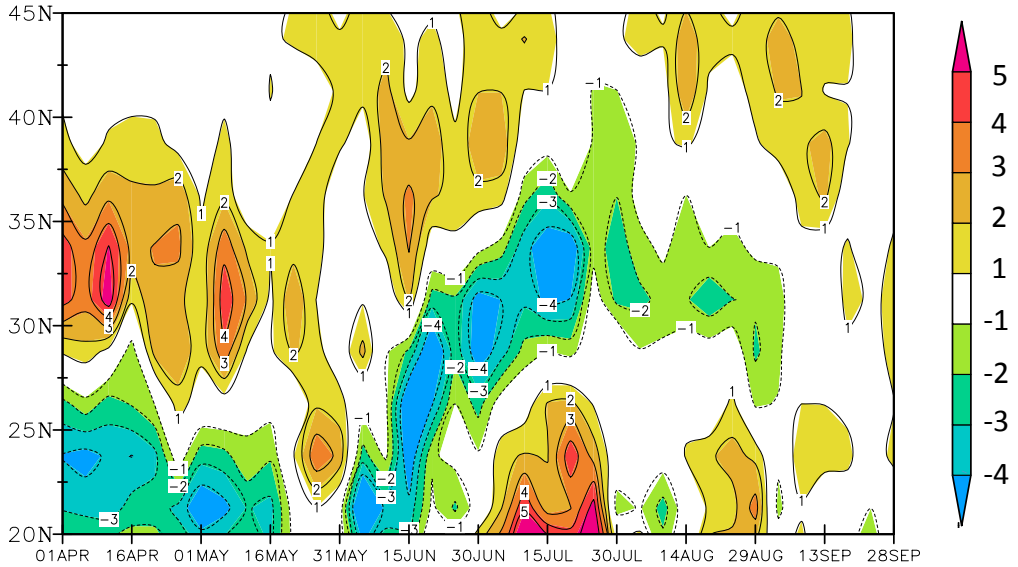
GPCP



SP-CCSM4

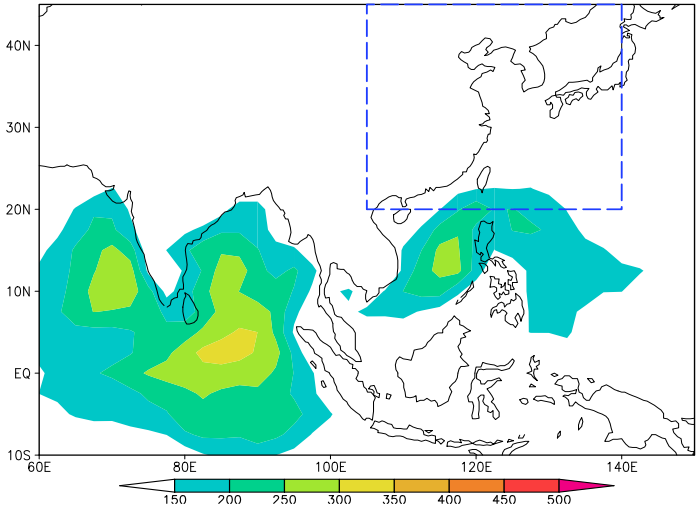


Model-OBS

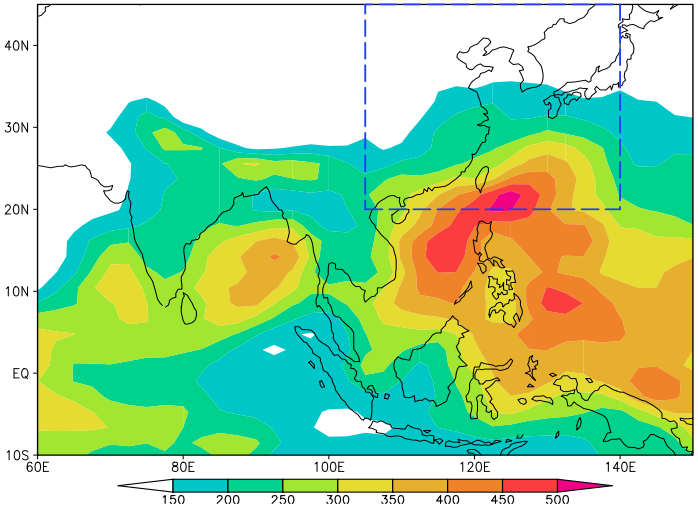


30-60 Day Variance

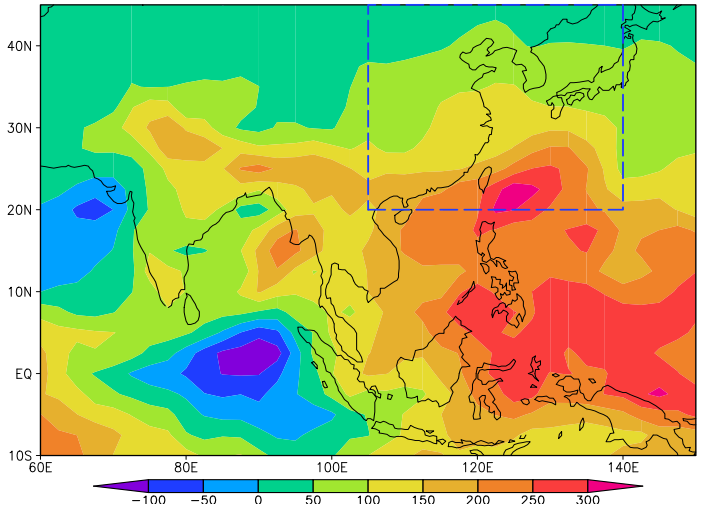
NOAA OLR



SP-CCSM4



Model-OBS



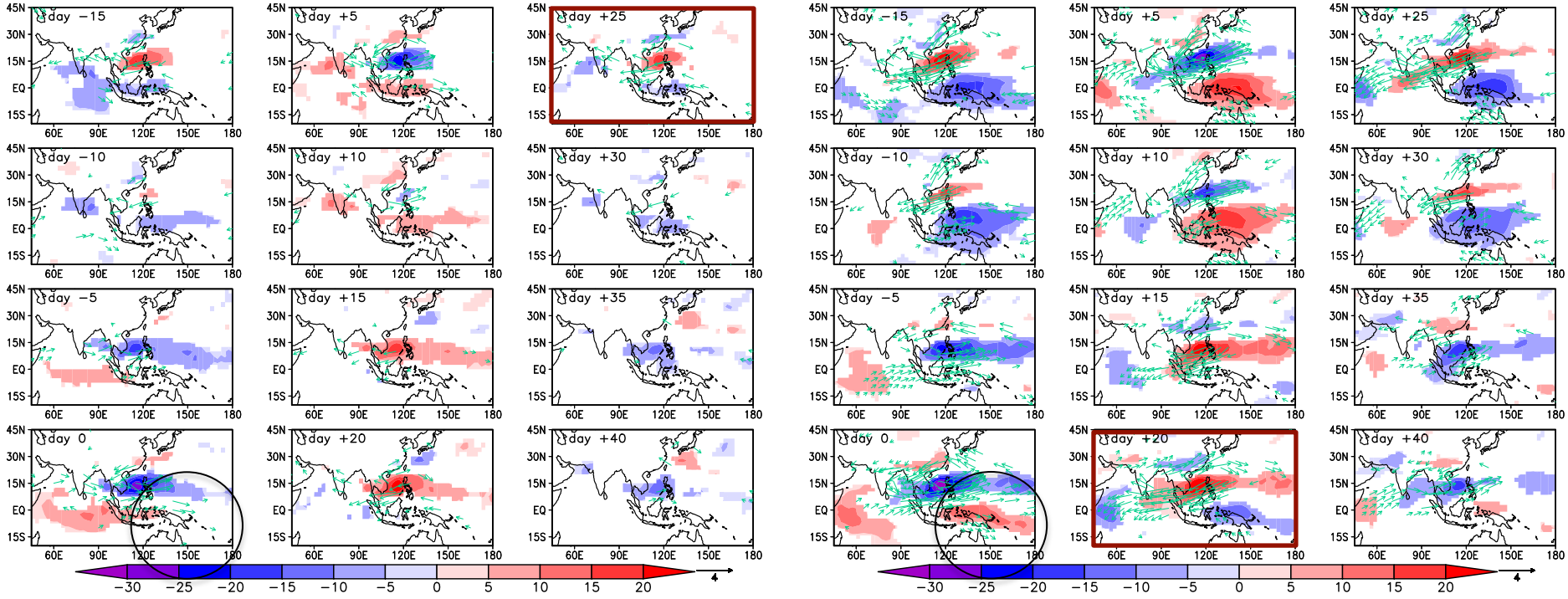
OLR index:
112.5-120E
10-17.5N

OLR and 850mb Wind

OBS

SP-CCSM4

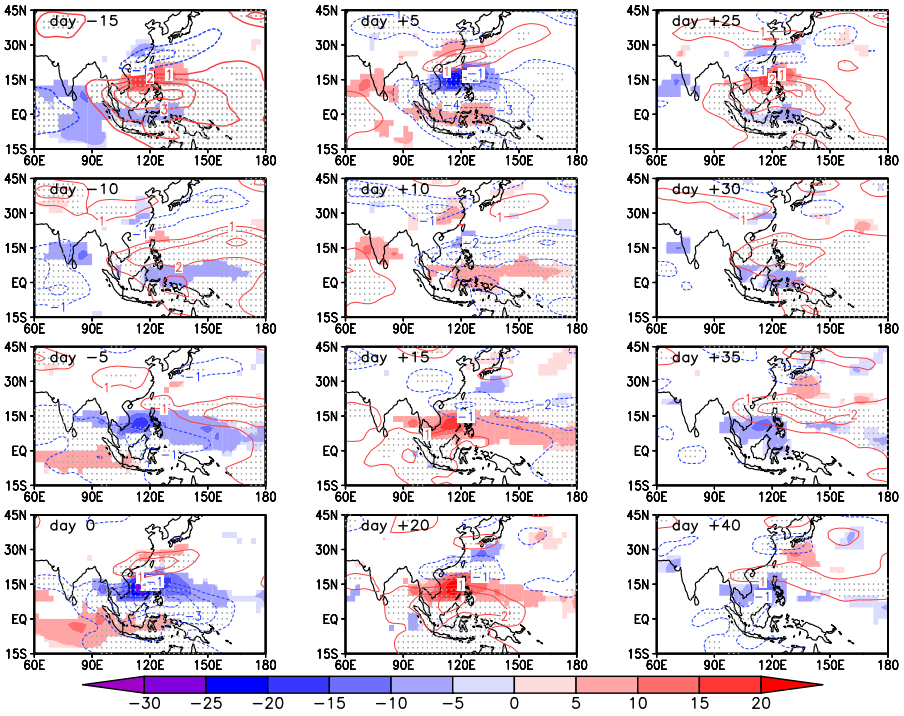
Mei-yu onset

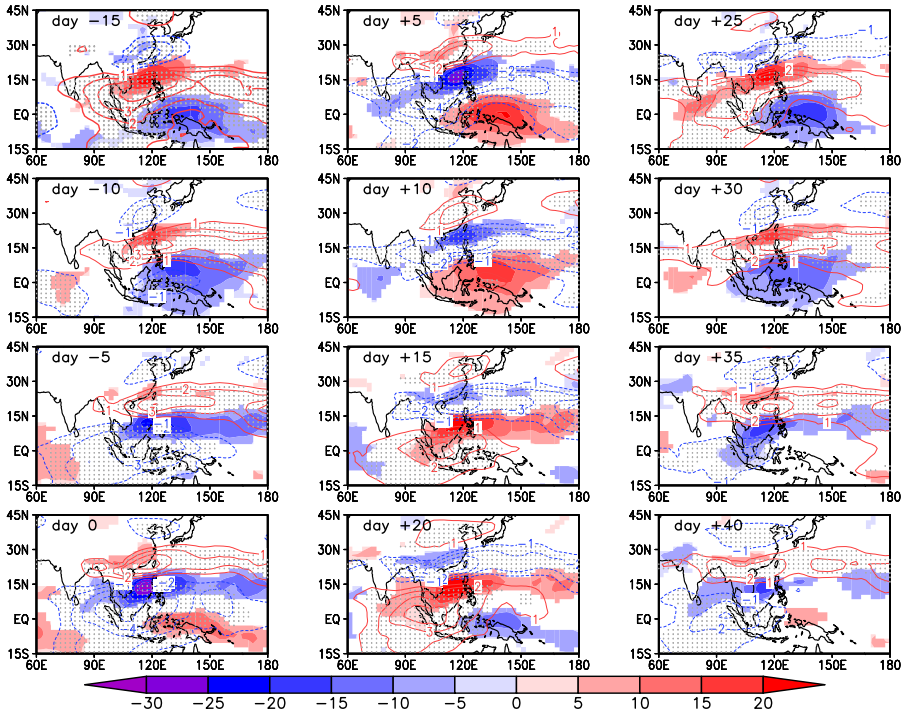


OLR and Windshear

OBS

SP-CCSM4

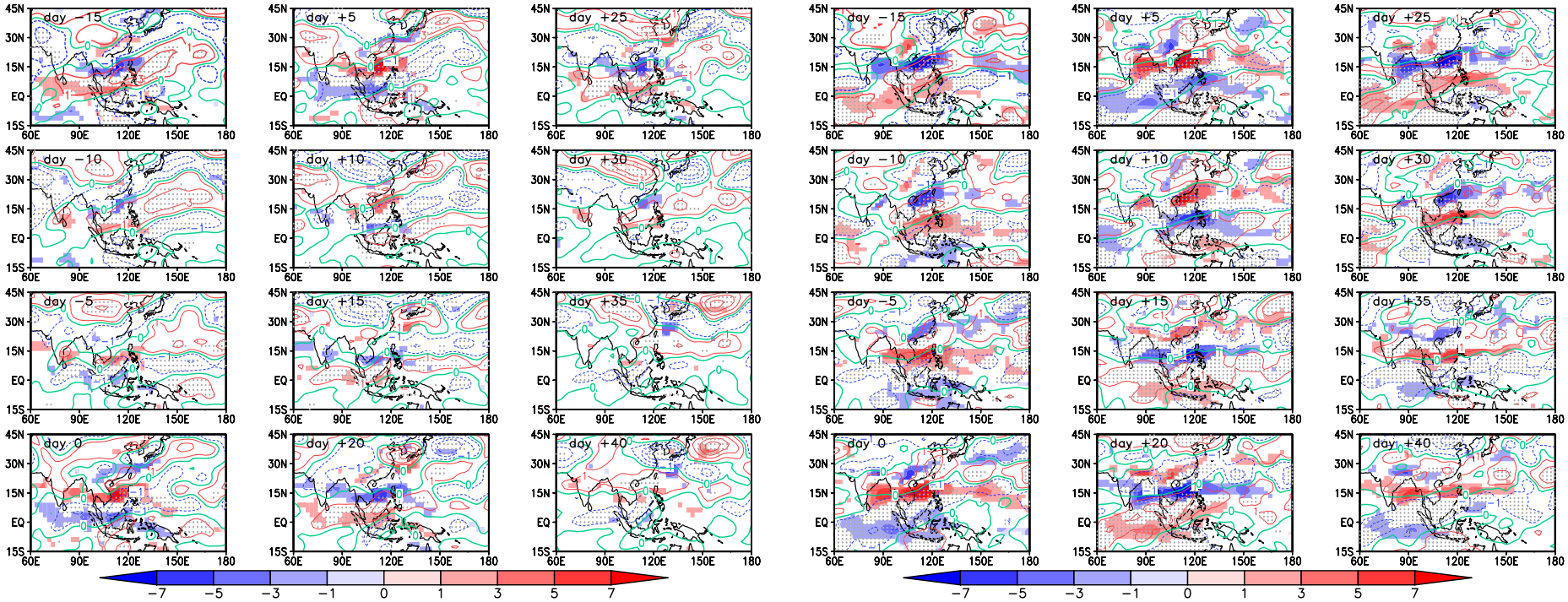




850mb and 200mb Vorticity

OBS

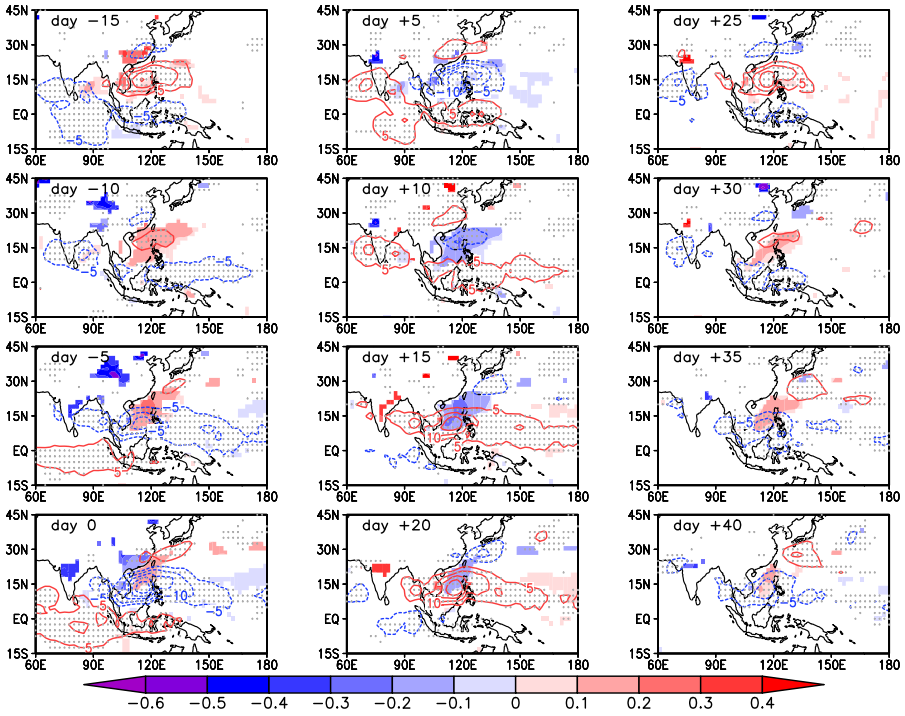
SP-CCSM4

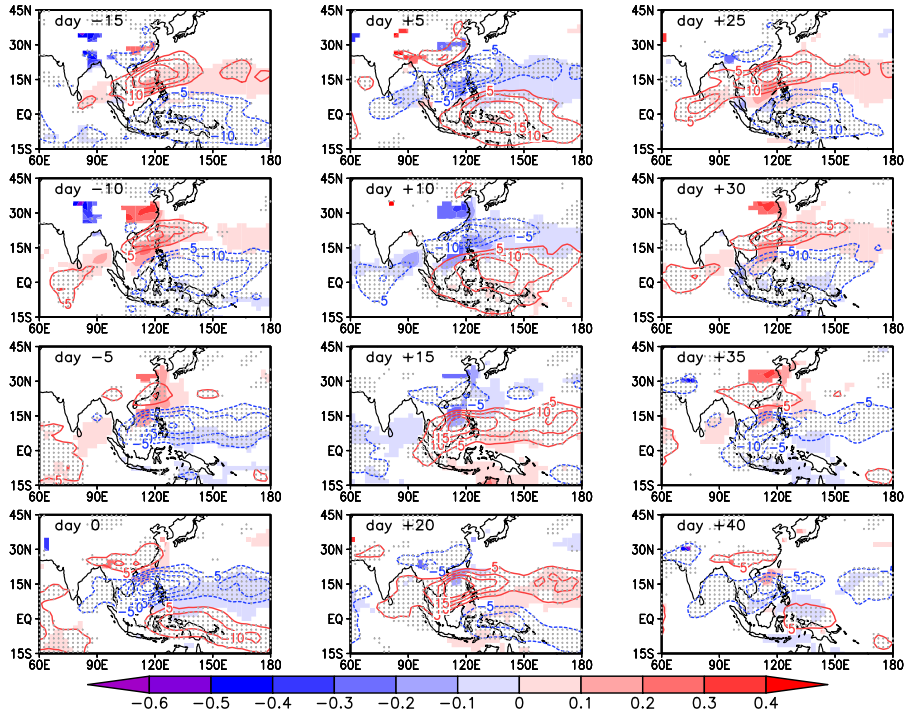


SST and OLR

OBS

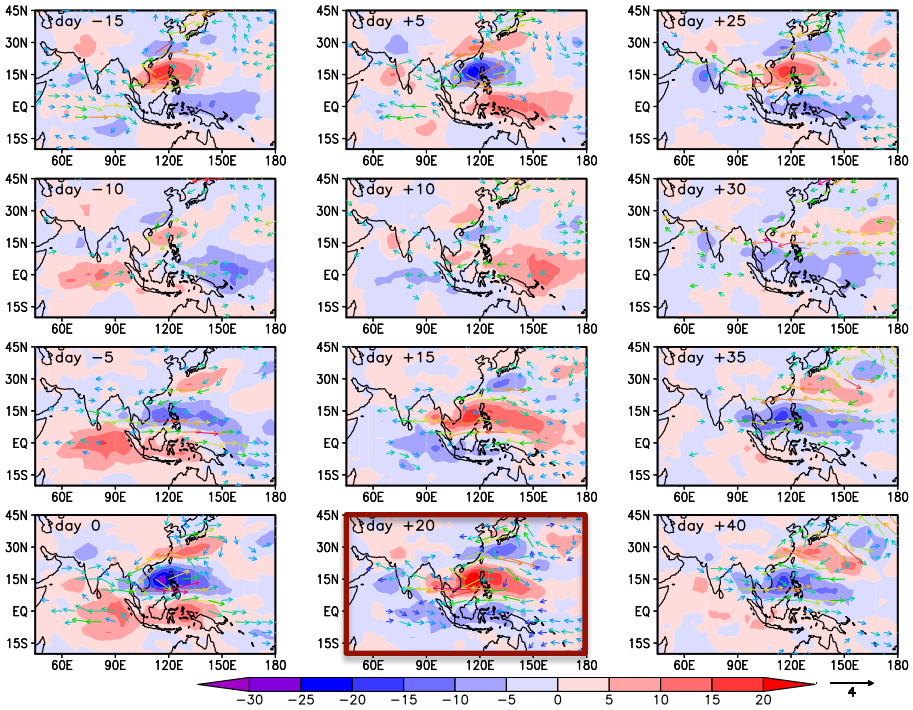
SP-CCSM4



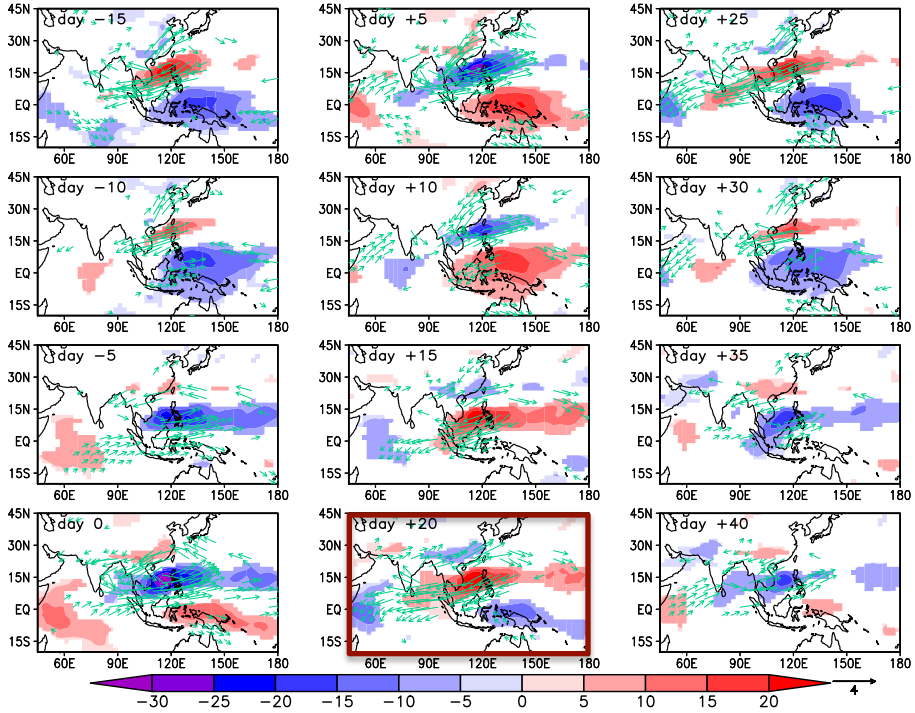


Dry WP Warm Pool

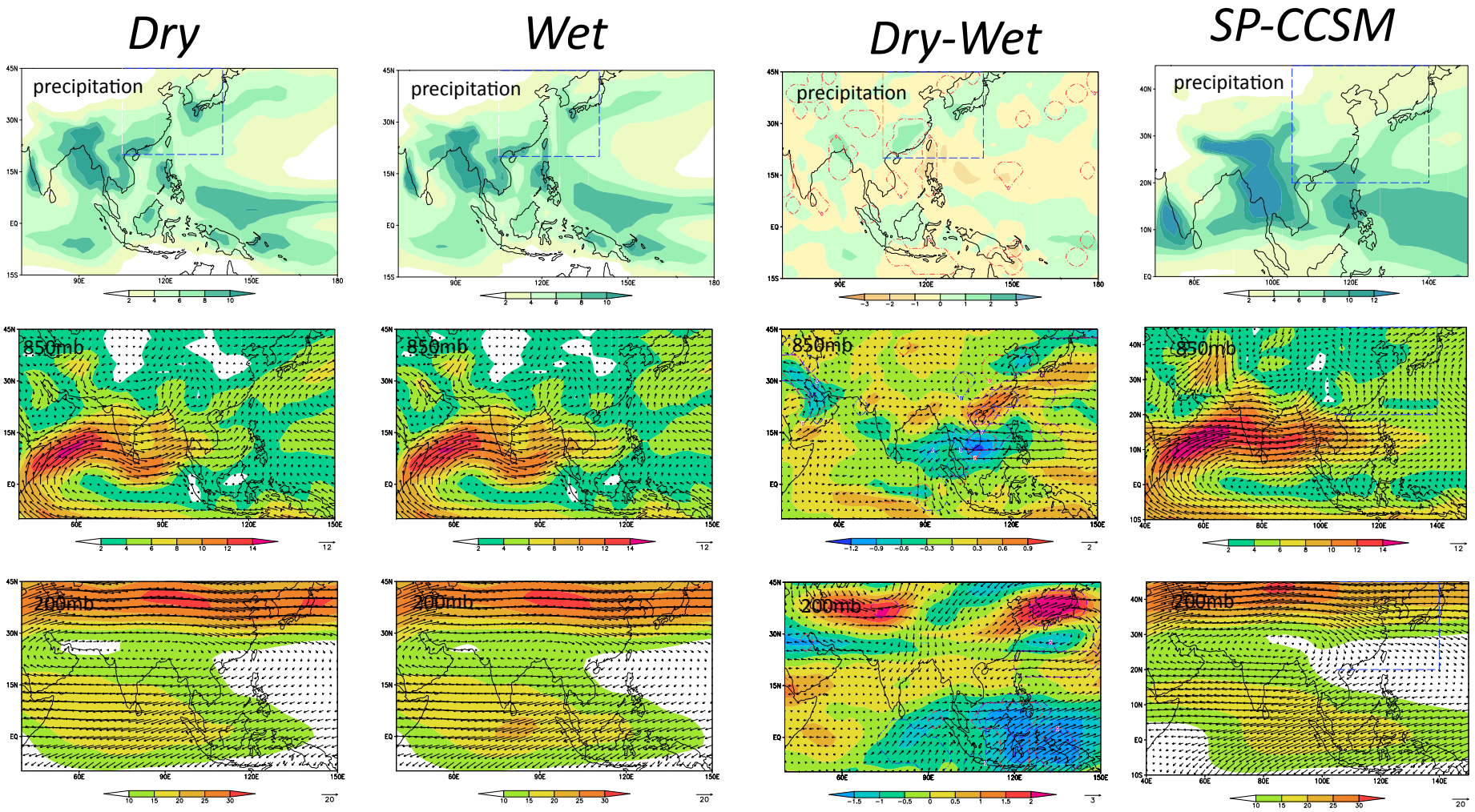
OBS



SP-CCSM4



WP Warm Pool Climatology



Summary

- SP-CCSM4 captures the observed characteristics of the EASM ISV
- The onset of the Mei-yu season in the model happens 5 days earlier than in the observations
- The onset of the Mei-yu season is influenced by the conditions prevailing over the WPWP:
  - Dry WPWP and wet SCS -> earlier onset
  - Dry WPW mean conditions -> enhanced rainfall