

Contrasting the role of regional and remote circulation in driving the Asian monsoon in HadGEM3-GA7

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Model: HadGEM3-GA7

Exp	Description
CONT	AMIP-like
GLOB	Global wind nudging
ELSE	Wind nudging outside Asia*

* Asia: 60°–125°E, 10°–45°N (green box)

Nudging: Constrain the horizontal wind to ERA-interim

- CONT – OBS: total bias
- GLOB – OBS: the impact of nudging globally
- ELSE – OBS: the impact of nudging elsewhere

Main conclusions:

- Nudging cannot perfectly constrain a precipitation bias, particularly over the tropics, because convection is still freely evolving.
- Precipitation biases over China are not significantly improved even with a better performance of Western Pacific Subtropical High in nudged experiments
- Seasonal precipitation biases over India are mostly driven by remote (local) circulation in winter (summer).

SST & Bias in P & 925-hPa Wind

