Third Pole Climate Forum

Evaluation of TPCF-1 and TPCF-2 Outlook and Outlook for JJAS Season 2025

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Outlines

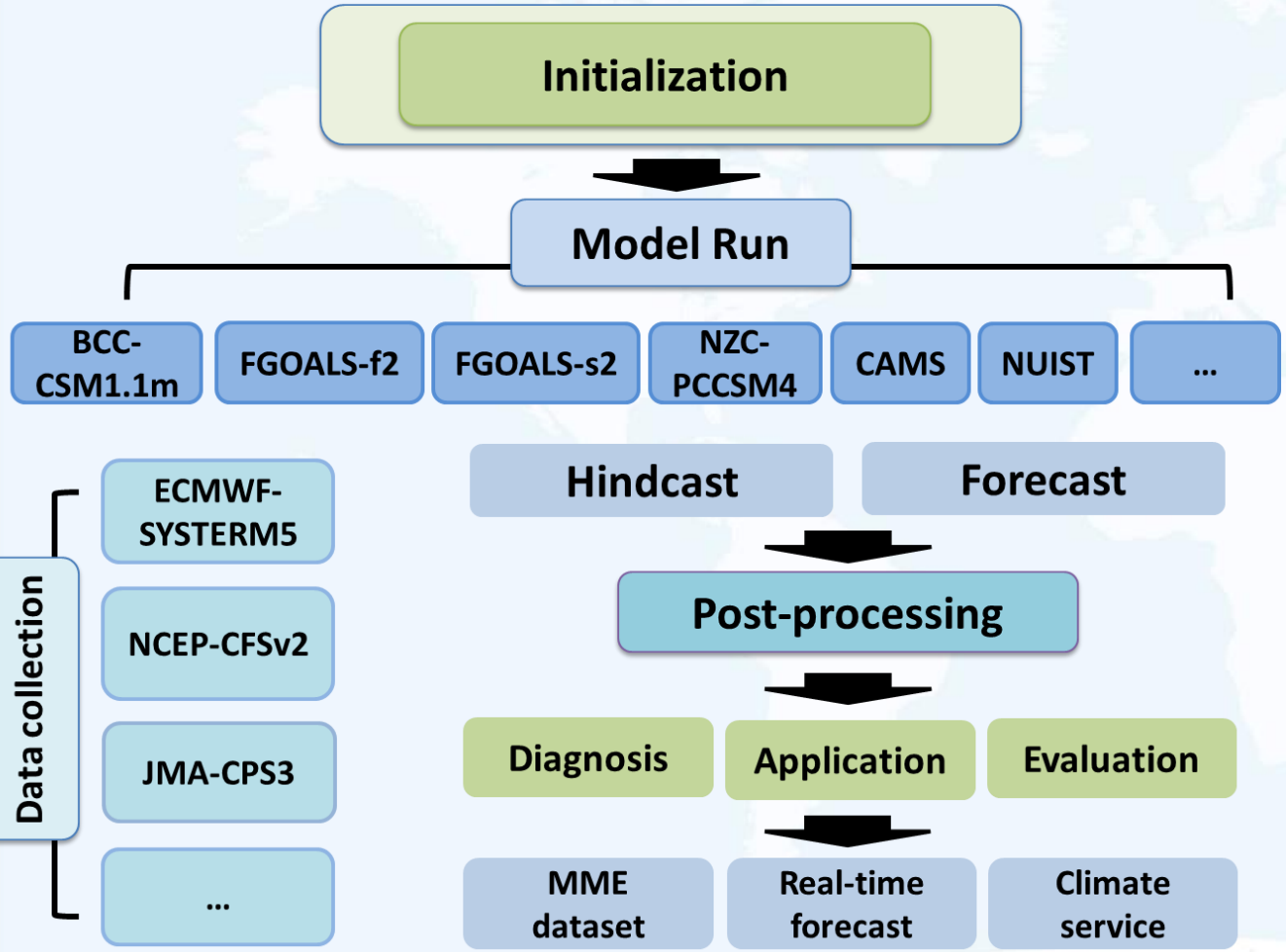
1 Evaluation of TPCF-1 & 2

2 Outlook of JJAS 2025

Introduction of CMME

China Multi-Model Ensemble prediction system version 2.0（CMMEv2.0）

CMME Structure



CMME Models

Model	Nation	Institution	Release	Atms Res	Ocean Res	Ens	Fcs Len (mon)
BCCCSM1.1m	China	BCC	2015	T106, L26	1/3°~30 km, L40	24	13
FGOALS-f2	China	IAP	2017	1×1, L32	1×1, L50	35	6
FGOALS-s2	China	IAP	2013	R42, L26	1×1, L30	4	6
NZC-PCCSM4	China	IAP	2013	2.5×1.9, L26	1×1	8	6
ECMWF-S5	Euro	ECMWF	2017	T319, L91	ORCA 0.25, L75	15	6
NCEP-CFSv2	USA	NCEP	2011	T126, L64	1×1, L40	4	10
JMA-CPS3	Japan	JMA	2022	TL319, L100	0.25 x 0.25, L60	100	6
CAMS	China	CAMS	2020	T106, L31	1×1, L50	8	6
NUIST	China	NUIST	2019	T106, L19	2×2(赤道0.5), L40	9	24
BCCCPSv3	China	CMA	2021	T266, L56	1/4°	20	6-7

Verifications for TPCF-1

- **Method: ACC, Ps scores et al.**

TCC is recommended for **historical verification**

ACC is recommended for **real-time verification**

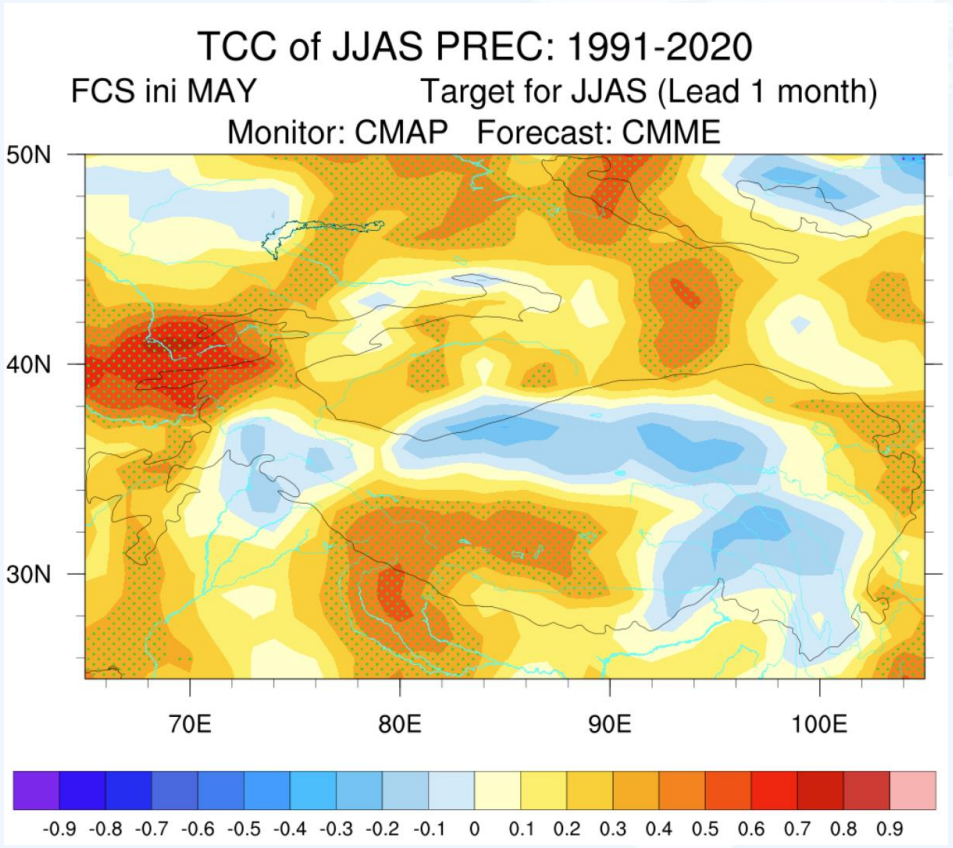
$$TCC_i = \frac{\sum_{j=1}^{N}(x_{i,j} - \bar{x}_i)(y_j - \bar{y})}{\sqrt{\sum_{j=1}^{N}(x_{i,j} - \bar{x}_i)^2}\sqrt{\sum_{j=1}^{N}(y_j - \bar{y})^2}}$$

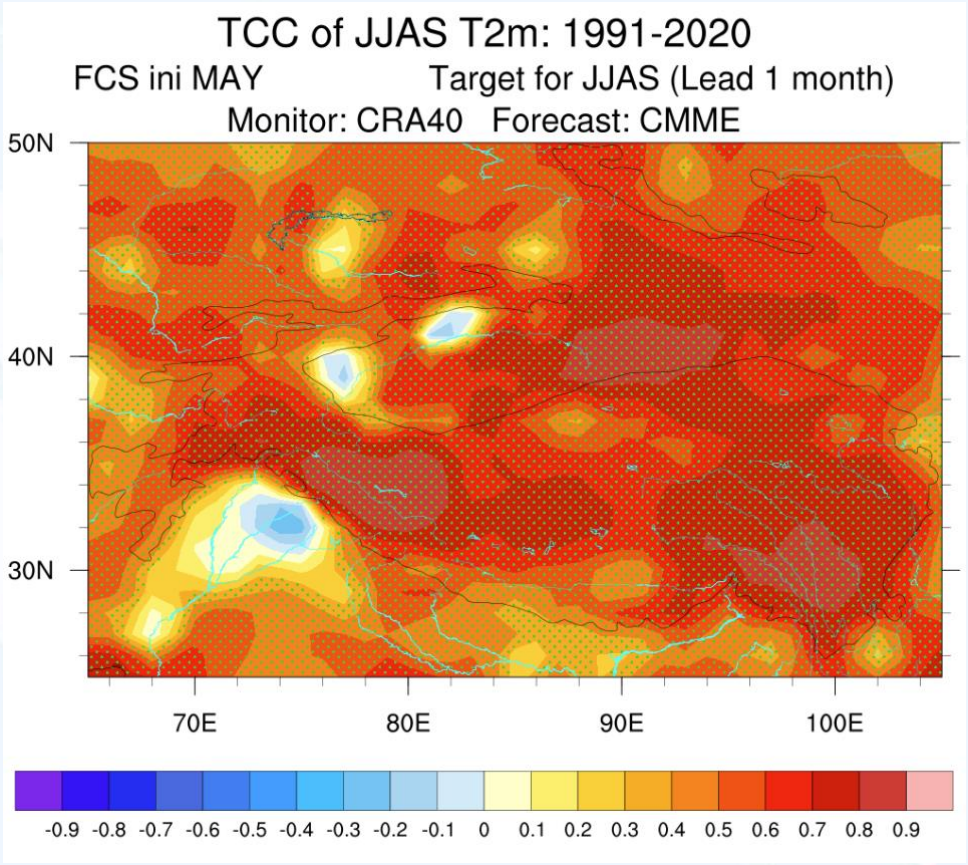
$$ACC_j = \frac{\sum_{i=1}^{M}\Delta x_{i,j}\Delta y_{i,j}}{\sqrt{\sum_{j=1}^{M}\Delta x_{i.j}^2}\sqrt{\sum_{j=1}^{M}\Delta y_{i,j}^2}}$$

Gridded CRA-40 from CMA and station observations are used for verification

Verifications for TPCF-1

- **Method: TCC, ACC, Ps scores et al.**



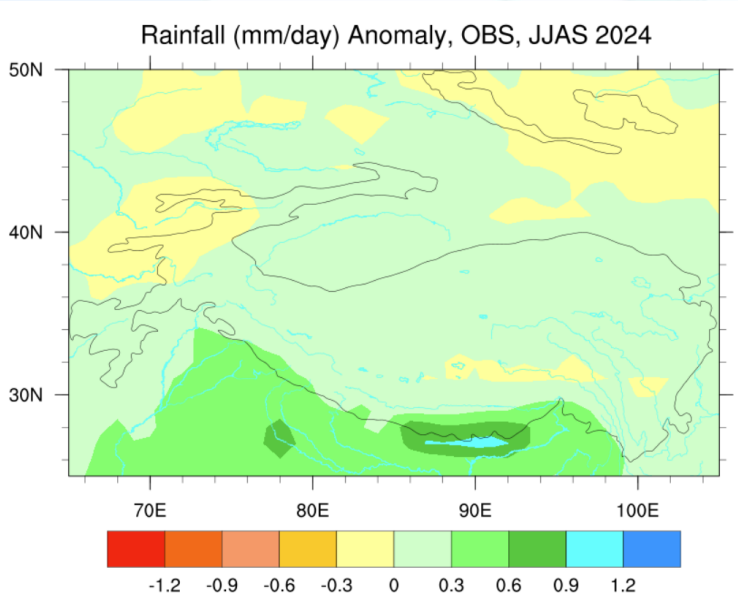


Verification products for TPCF1

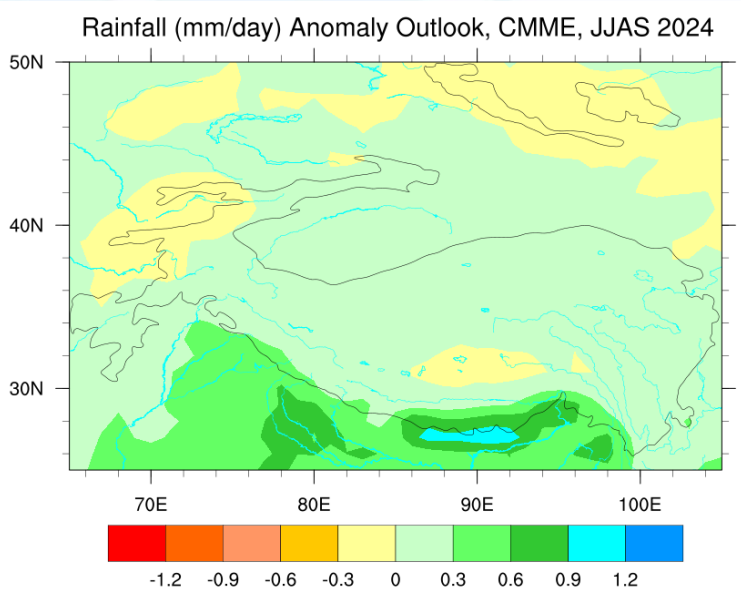
CMA Deterministic Prediction

- **Variables:** Precipitation Anomaly, **Relative to:** 1991-2020 **IC:** May

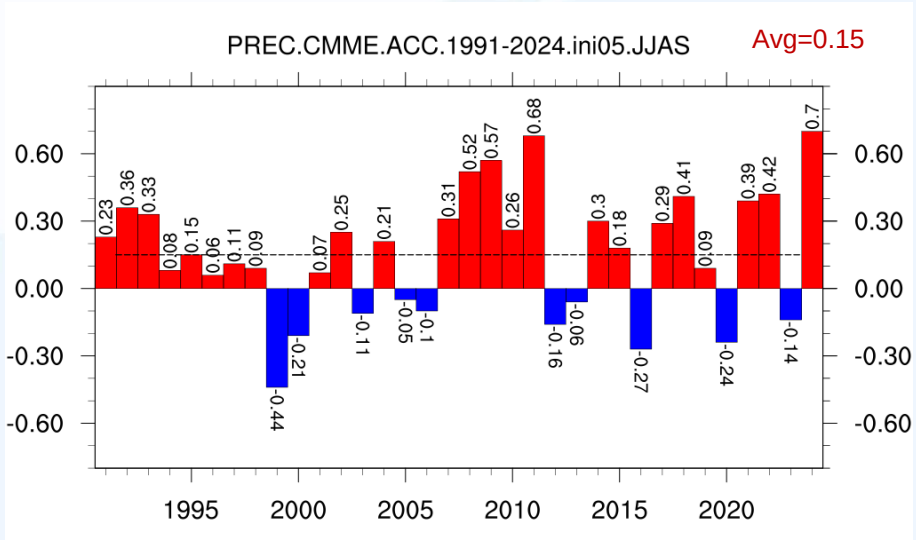
OBS



Outlook ACC=0.70



Record 1st of ACC since 1991

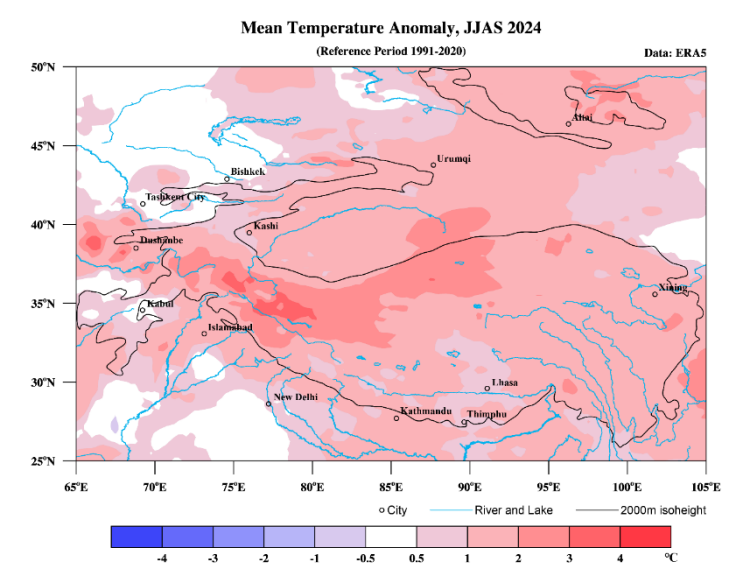


Verification products for TPCF1

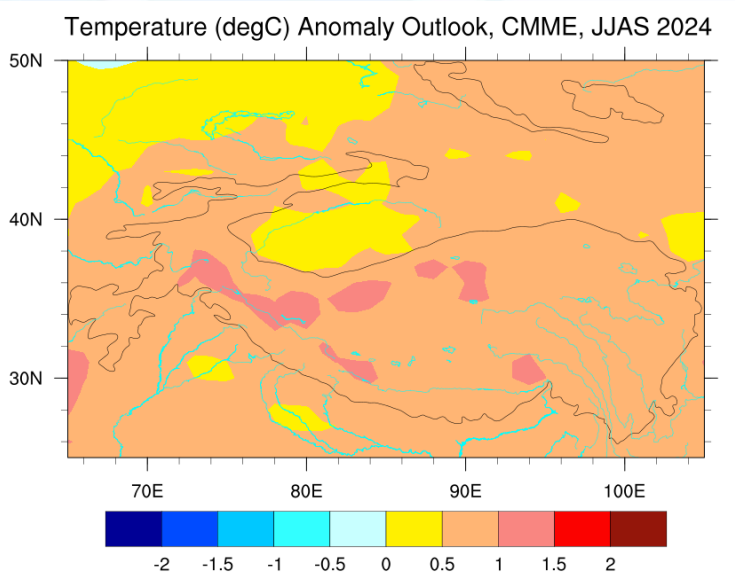
CMA Deterministic Prediction

- **Variables:** Precipitation Anomaly, **Relative to:** 1991-2020 **IC:** May

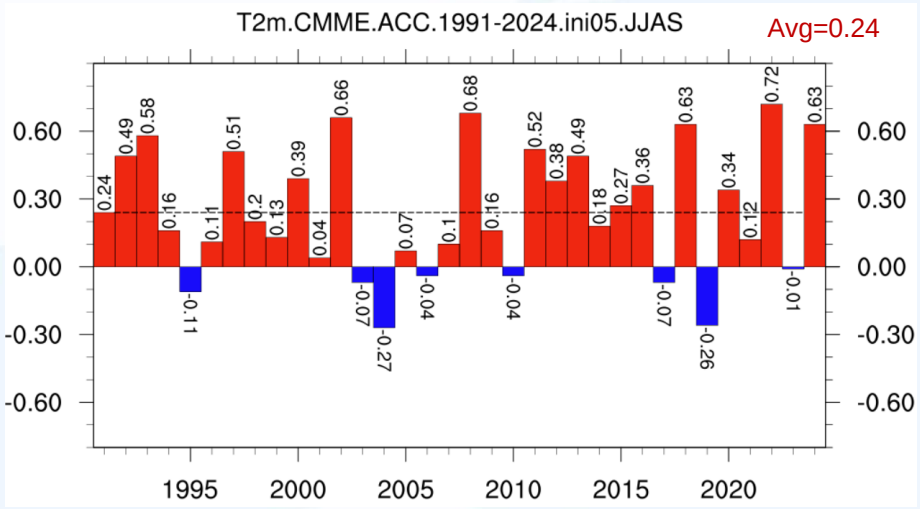
OBS



Outlook ACC=0.53

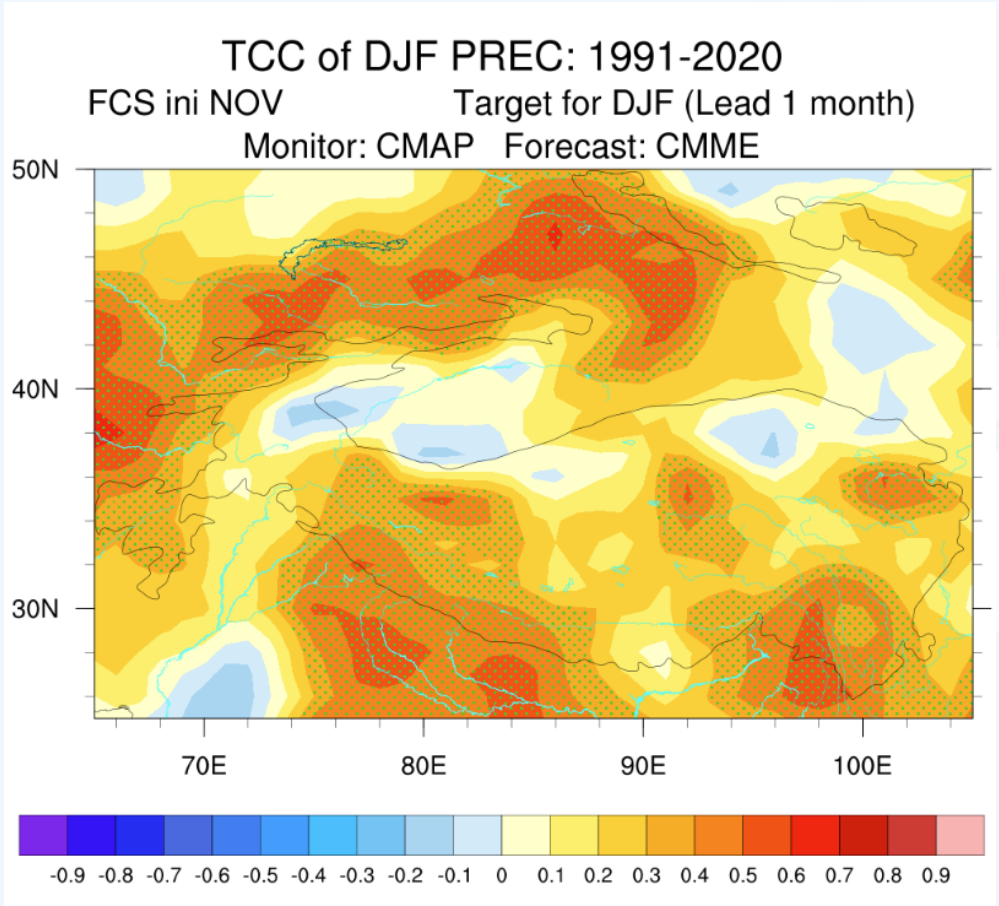


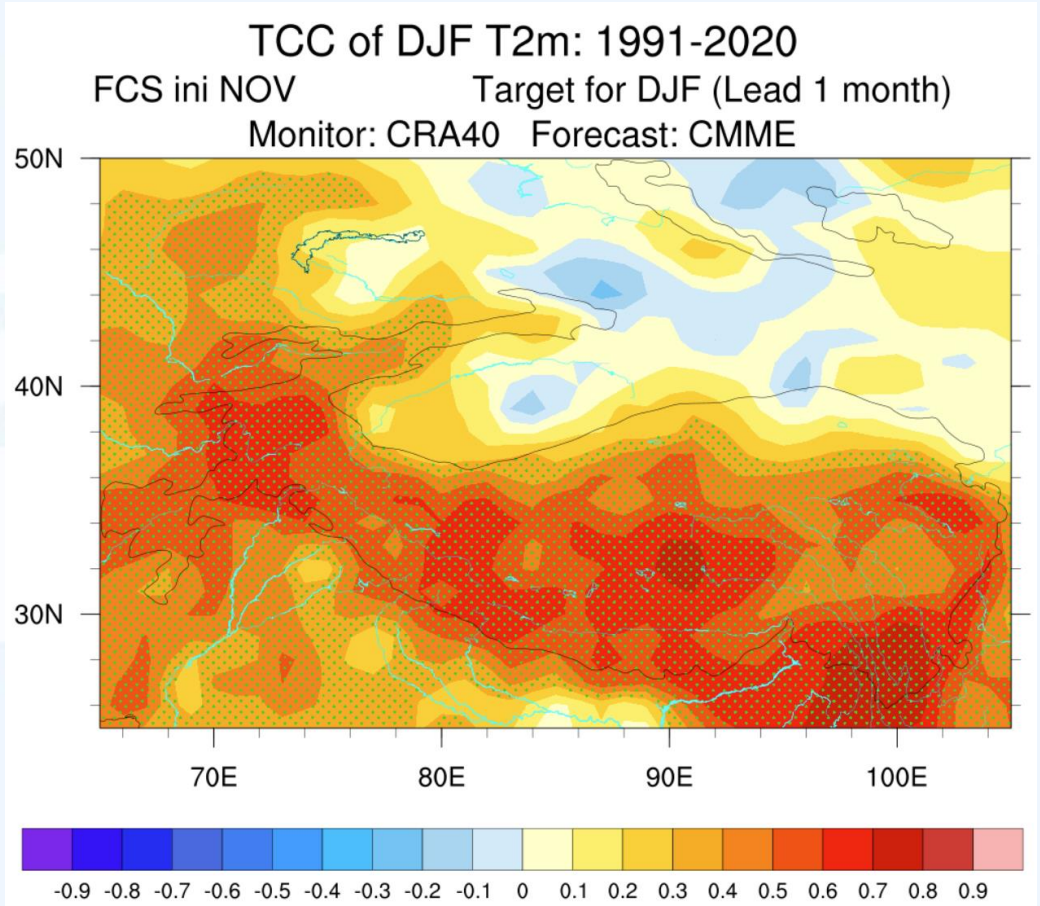
Record 4th of ACC since 1991



Verifications for TPCF-2

- **Method: TCC, ACC scores et al.**
- **Target: DJF**



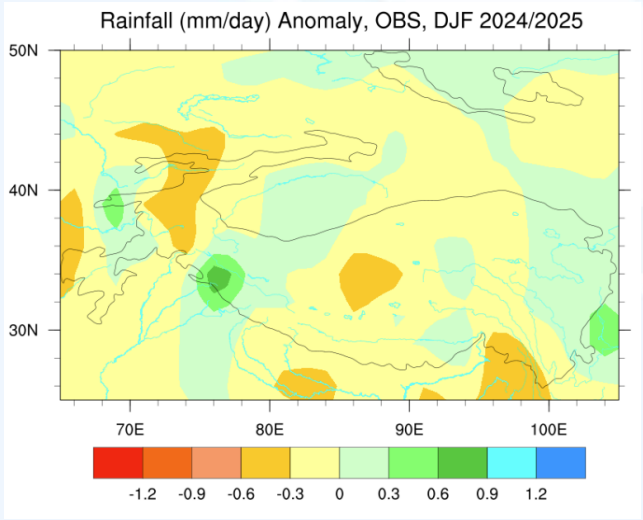


Gridded CRA-40 and in-situ observations from CMA are used for verification

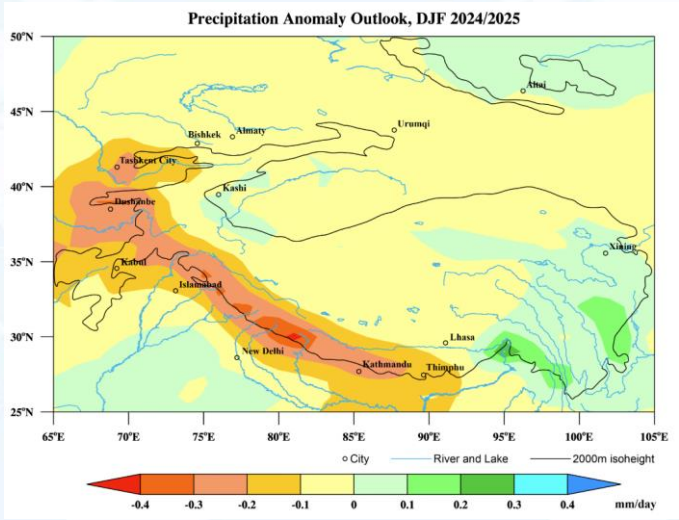
CMME-S2D Deterministic Prediction

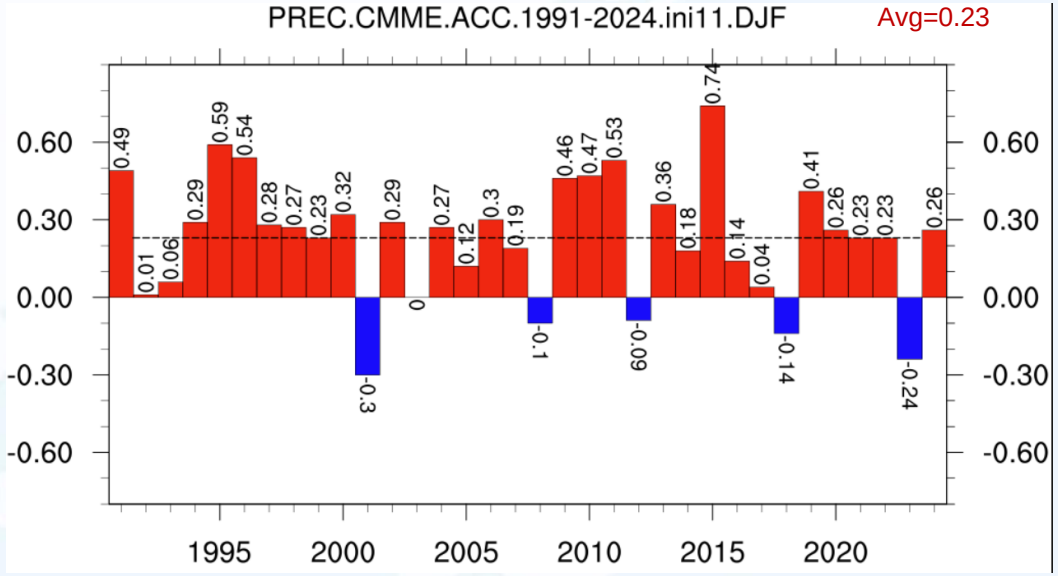
- **Variables:** Precipitation Anomaly, **Relative to:** 1991-2020 **IC: Nov**

OBS



Outlook ACC=0.263

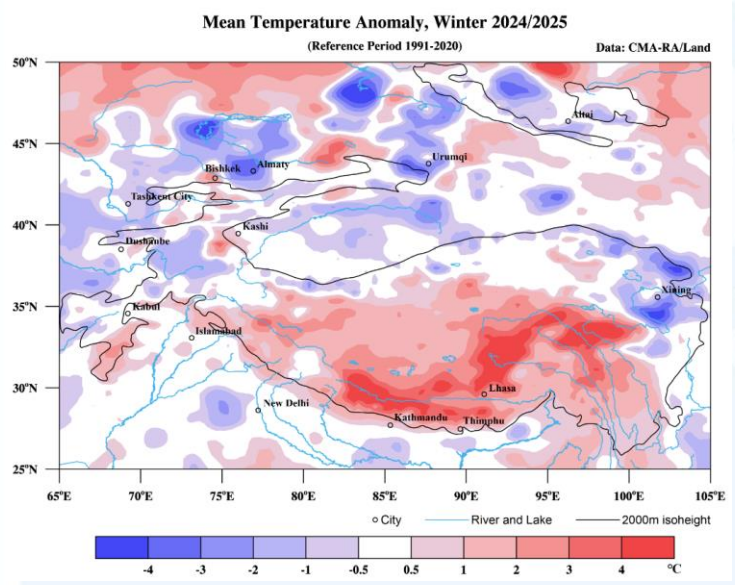




CMME-S2D Deterministic Prediction

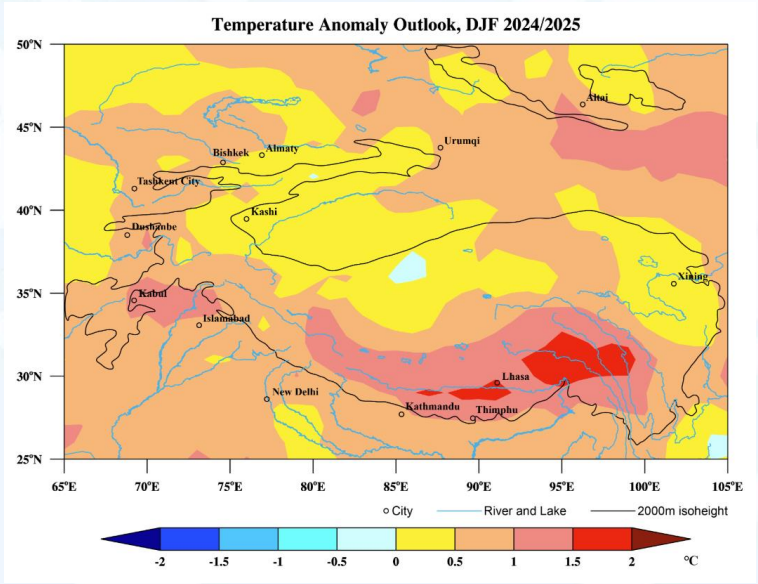
- **Variables:** T2m anomaly **Relative to:** 1991-2020 **IC: Nov**

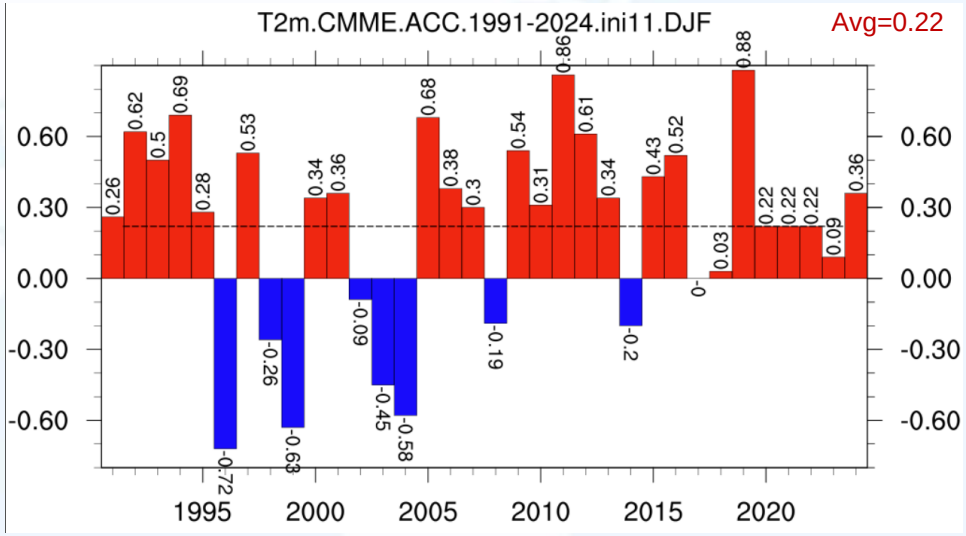
OBS



Outlook

ACC=0.36





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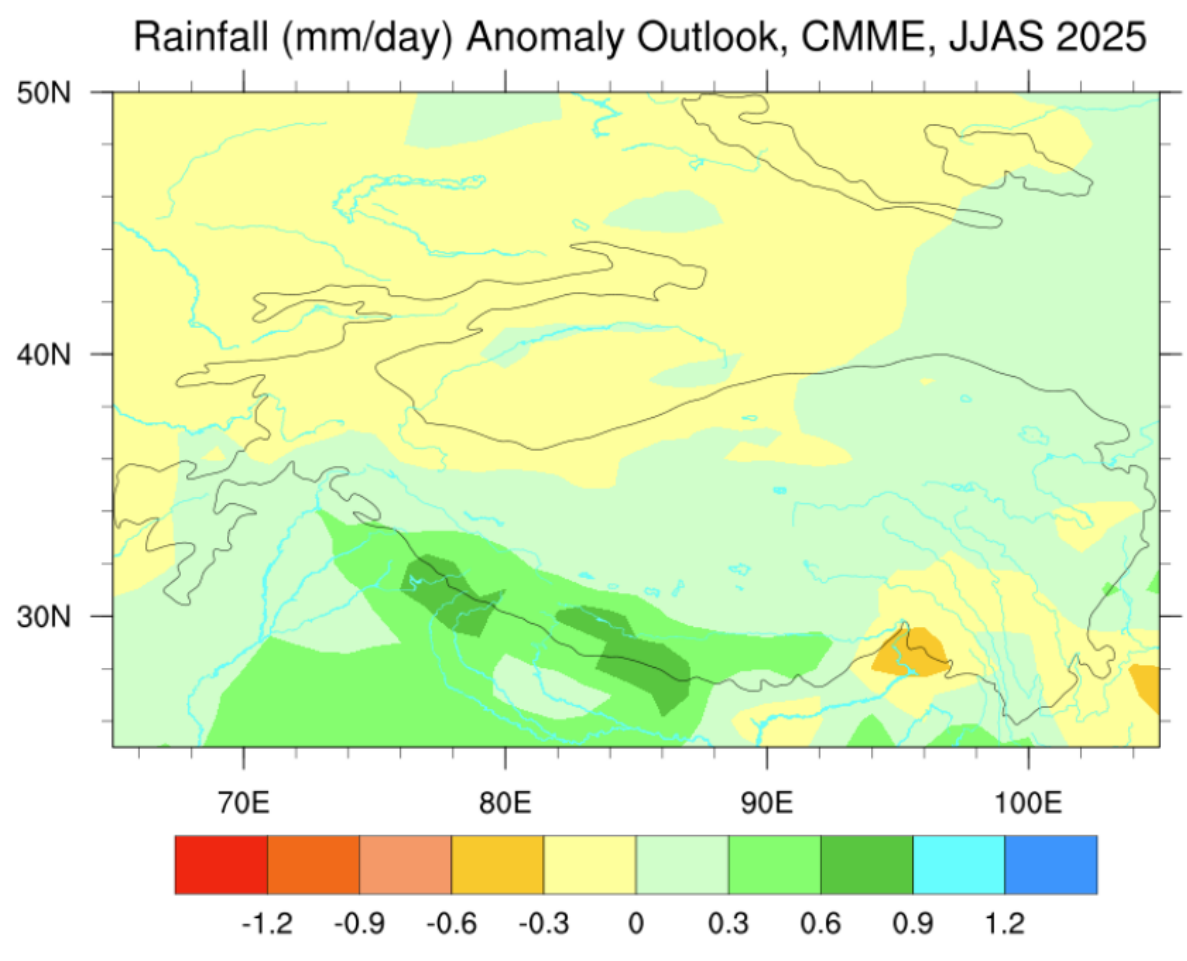
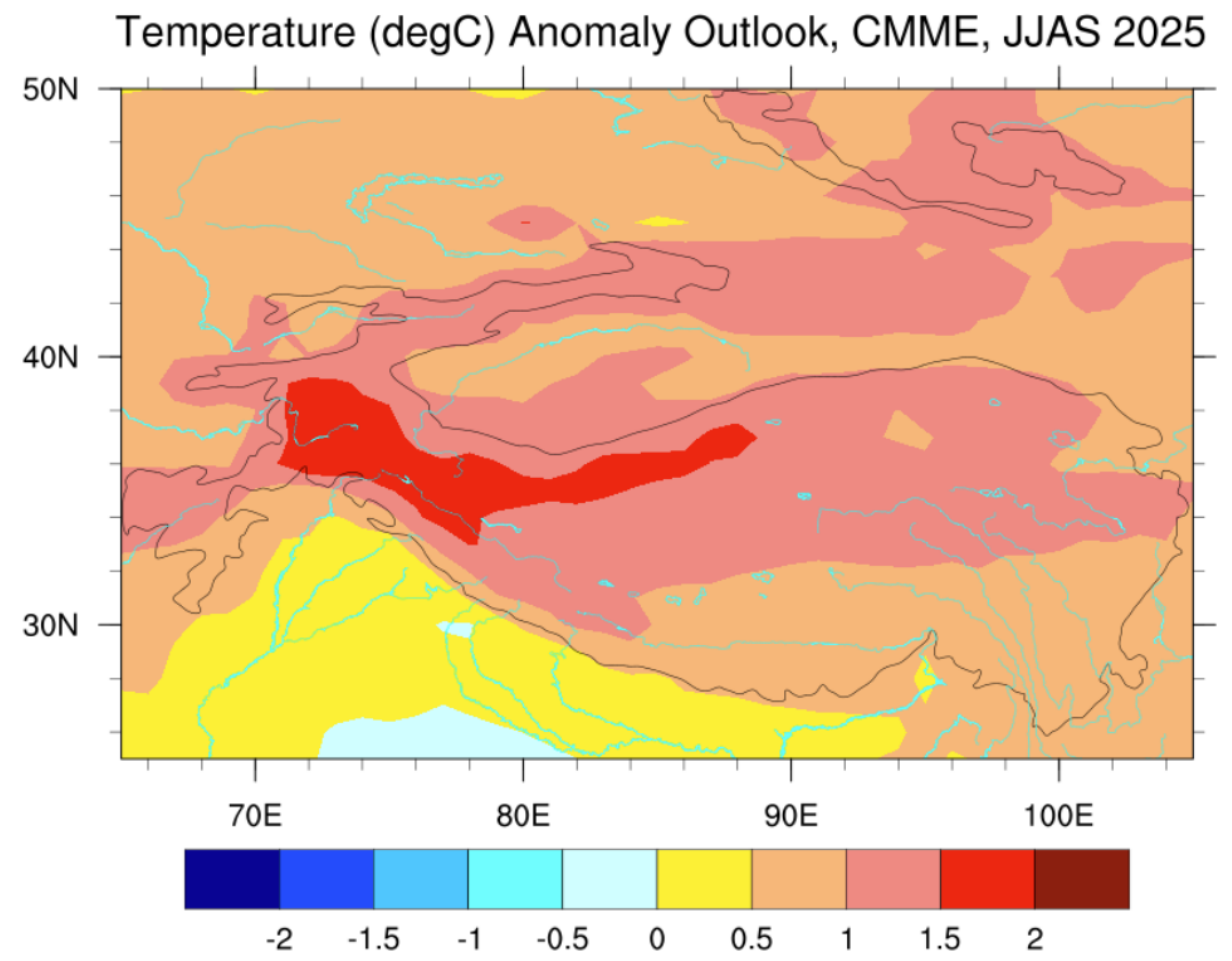
CMME-S2D Deterministic Prediction

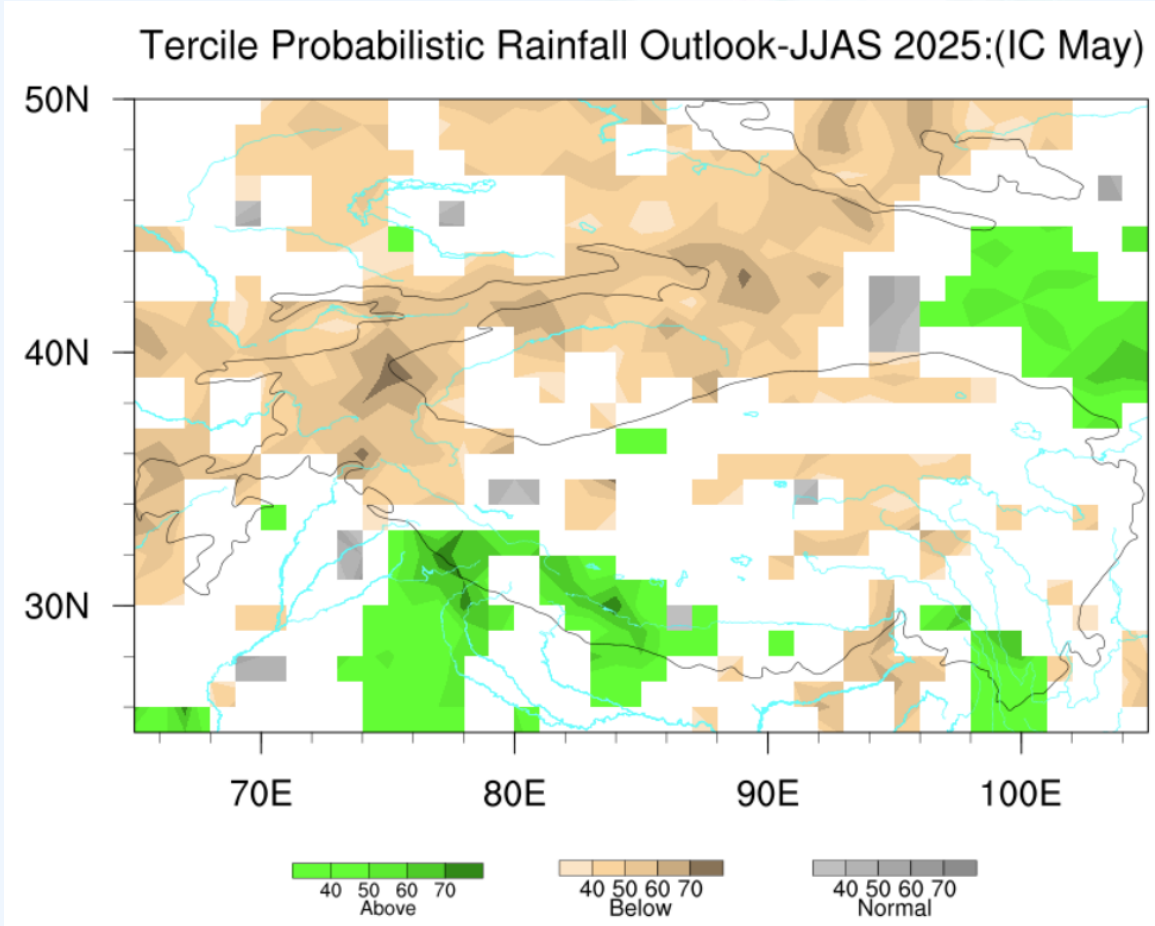
- **Variables:** Precipitation Anomaly, T2m anomaly **Relative to:** 1991-2020 **IC:** May

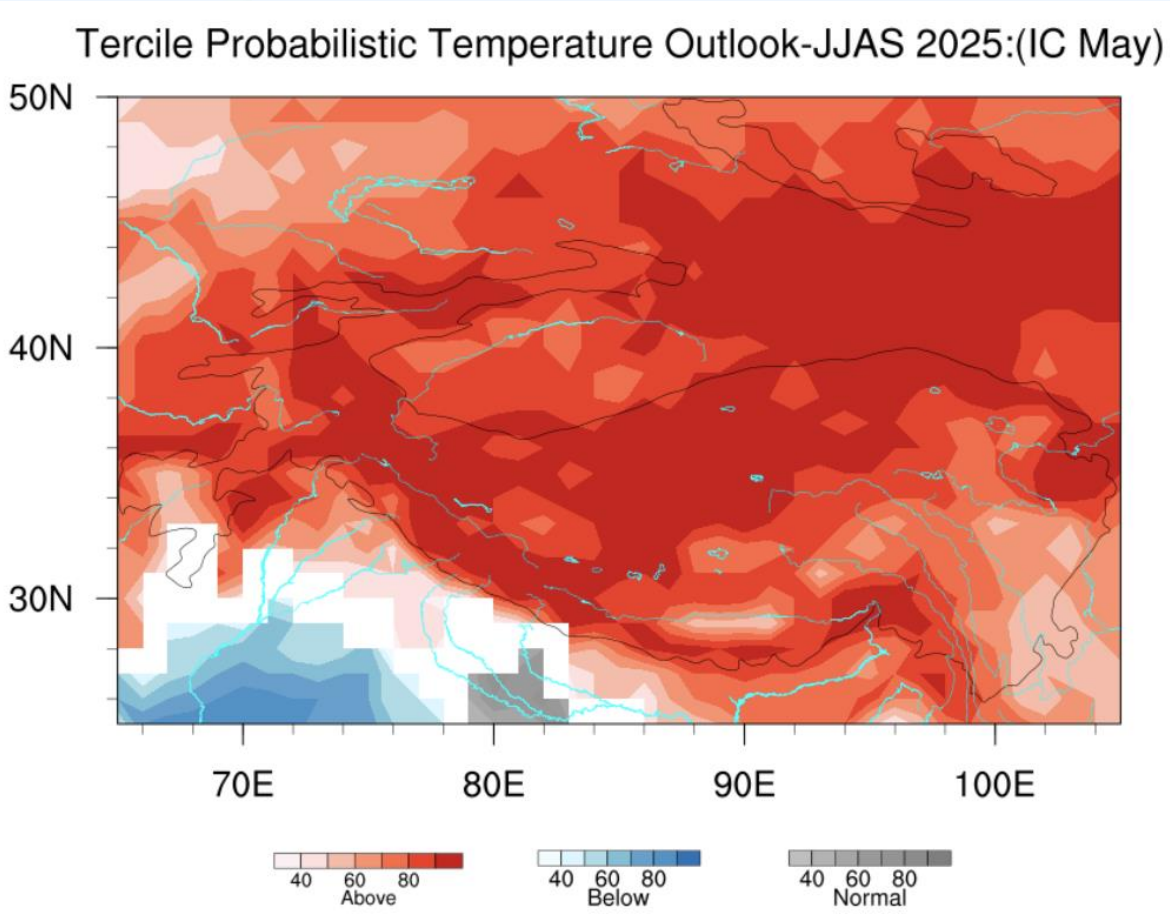




CMME-S2D Probabilistic Prediction

- **Variables:** Precipitation, T2m **Relative to:** 1991-2020 **IC:** May






Thanks