Supplementary Figures.

**Fig. S1.** EN composites during JJA for ASST (°C) for High Top (A) and Low Top (B) models separately [ENC (left), ENCM (middle) and ENM (right)]. Significant regions at 95% level are marked by black colour.

**Fig. S2.** Same as Fig. S1, but for LN composites. Some places are kept blank because there is not a single year for that particular type of composite in those models.
Supplementary Figures.
A) High Top Models
B) Low Top Models

Cont..
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