Title: The role of local heating in the 2015 Indian Heat Wave

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Supplementary Figure Caption:

Figure S1. Grey shade shows the region where MLD SAT for the week of May 21st-22nd to May 27th-28th meets or exceeds the 90th percentile of the average SAT for the corresponding week. Data visualizations produced using IDL [8.4] (Exelis Visual Information Solutions, Boulder, Colorado).

Figure S2. Comparison between daily SAT (°C) from MLD output (blue box plots) and from observations (green box plots) for multiple stations in and around the COHW. Time domain is 1990-2015 except for some stations (Daltonganj, Hyderabad, PBO Raipur and Varanasi) where observations were limited.

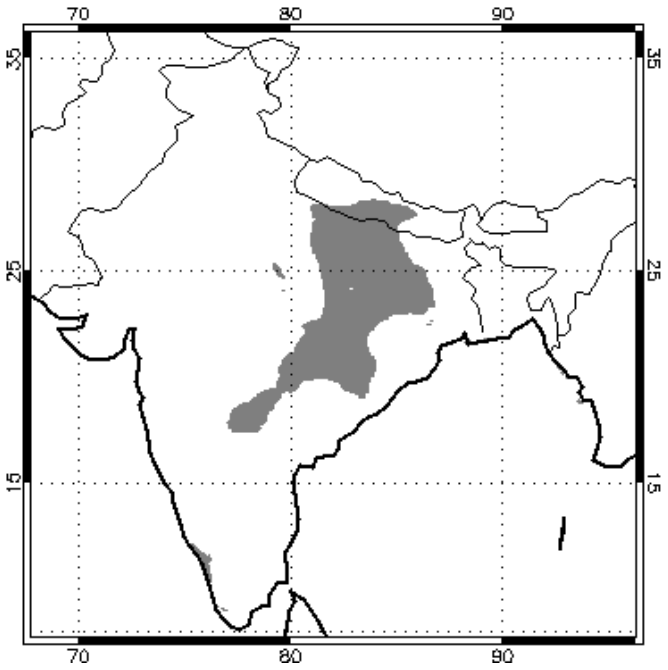
Figure S3: SAT anomaly (°C) for the month of May 2015 based on the monthly climatology of 1980-2015 based on (a) MLD and (b) ERA-I reanalyses. Data visualizations produced using IDL [8.4] (Exelis Visual Information Solutions, Boulder, Colorado).

Figure S4. MODIS LST 8-day composite anomaly (°C) based on 8-day climatology for the period of 2003-2015 for (a) May 17th-24th (b) May 25th–June1st and (c) June 2nd-9th. Any pixel with elevation above 1000m is not shown (white colored region). White color also shows pixel with missing values. Data visualizations produced using IDL [8.4] (Exelis Visual Information Solutions, Boulder, Colorado).

Supplementary Table Caption:

Table S1: Geographical locations of the stations and Pearson correlation coefficient between station and MLD SAT timeseries for the period of May-June in 2015, as shown in Figure 1

Table S2: Pearson correlation coefficient between daily station and MLD SAT timeseries for the period 1990-2015. For certain stations (Daltonganj, Hyderabad, PBO Raipur and Varanasi) the period of record is limited due to data availability.



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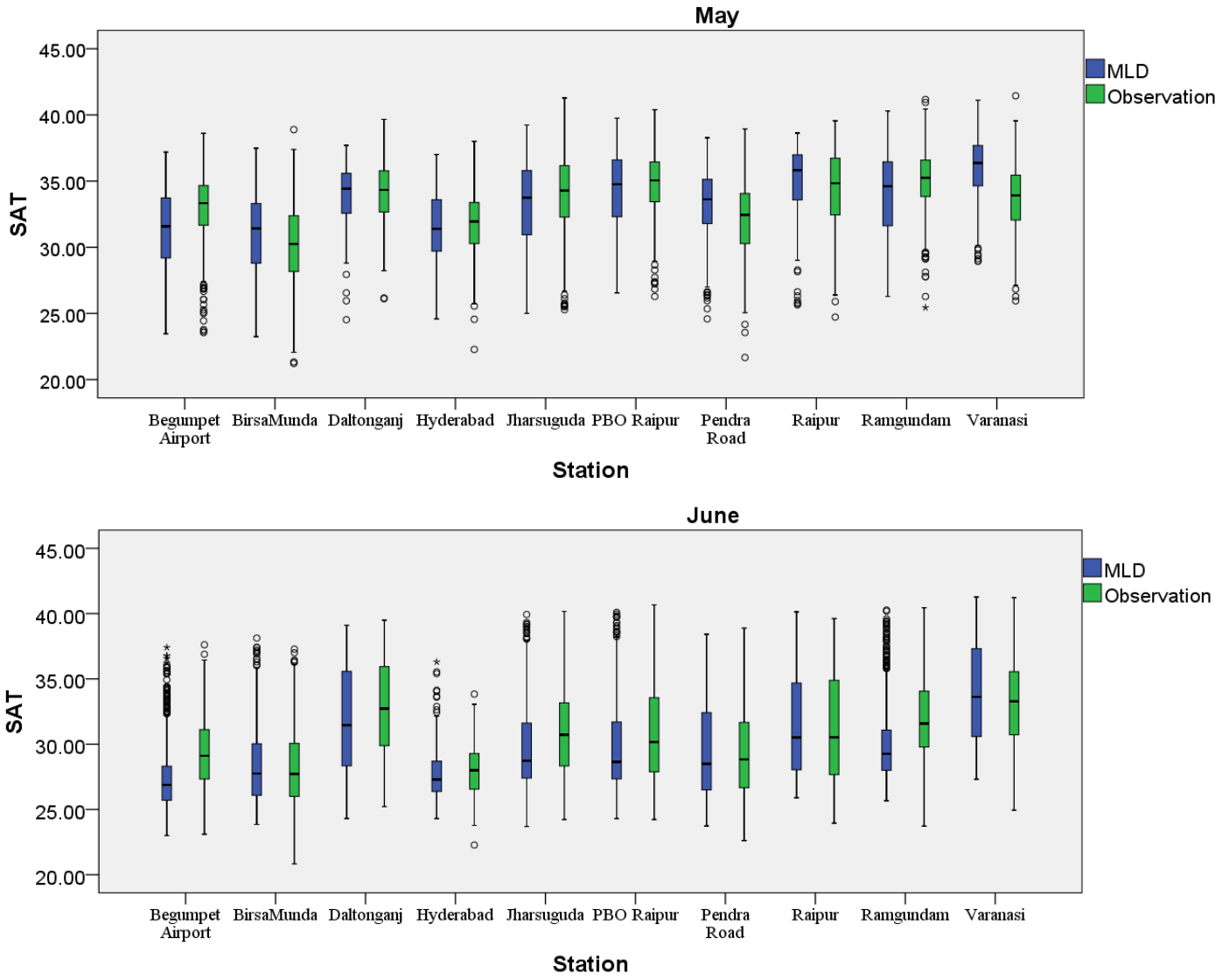

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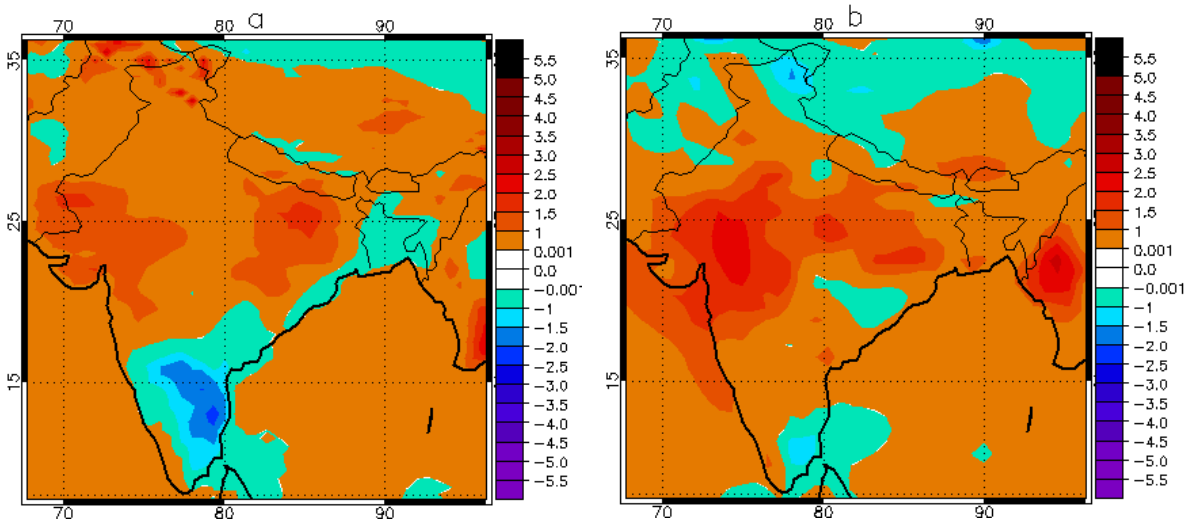

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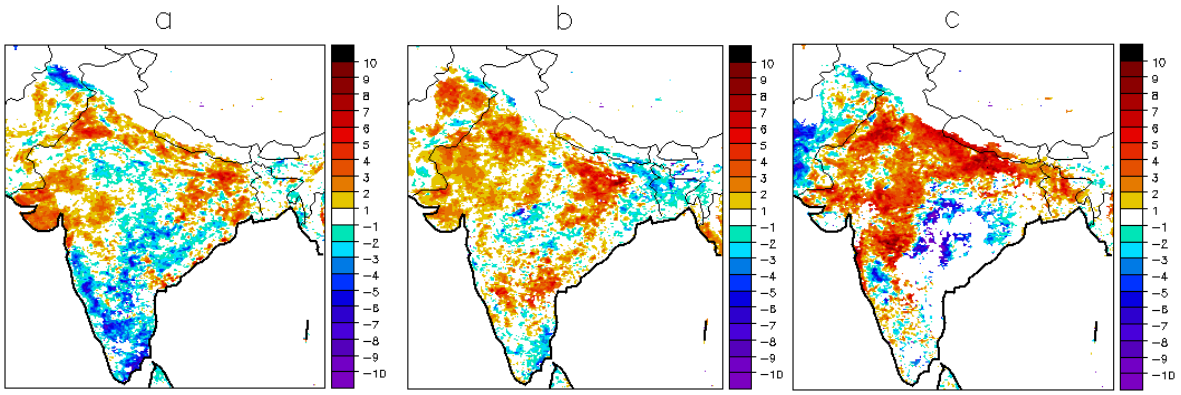

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Table S1: Geographical locations of the stations and Pearson correlation coefficient between station and MLD SAT timeseries for the period of May-June in 2015, as shown in figure 1

	Goya	**Daltonganj**	**Jharsuguda**	**Jabalpur**	**Ramgundam**	**Begumpet Airport**
Latitude and Longitude	+24.744 +84.951	+24.050 +84.067	+21.914 +84.050	+23.178 +80.052	+18.767 +79.433	+17.452 +78.461
R value	0.8	0.84	0.78	0.83	0.88	0.89

Table S2: Pearson correlation coefficient between daily station and MLD SAT timeseries for the period 1990-2015. For certain stations (Daltonganj, Hyderabad, PBO Raipur and Varanasi) the period of record is limited due to data availability.

Station Name	May	June
Begumpet (+17.452, +78.461)	0.66	0.70
BirsaMunda (+23.314, +85.322)	0.70	0.79
Daltonganj (+24.05 , +84.067)	0.63	0.85
Hyderabad (+25.383, +68.417)	0.67	0.71
Jharsuguda (+21.914, +84.05)	0.68	0.82
PBO_Raipur (+21.233, +81.65)	0.65	0.82
PendraRoad (+22.767, +81.9)	0.68	0.83
Raipur (+21.18, +81.739)	0.73	0.86
Ramagundam (+18.767 ,+79.433)	0.62	0.72
Varanasi (+25.452, +82.859)	0.6	0.74