

Surface Air Temperature

1. Products

Mean, maximum, minimum surface air temperature (SAT) and anomalies relative to the 1991–2020 climatological reference period at monthly, seasonal, and annual scales.

2. Products specifications

Areal coverage: TPRCC-Network service domain (25°–50°N, 65°–105°E)

Spatial resolution: 0.1° × 0.1°

Temporal resolution: Monthly, seasonal, annual

Projection: Regular latitude-longitude projection

Availability: Jan. 1979 to present

Timeliness: Within one week after the end of each month, season, or year

Format: PNG

Units: °C

3. Data sources

Daily surface air temperature data from CRA1.5 reanalysis from 1979 onwards.

4. Methodology

4.1 Monthly, seasonal, and annual means

Monthly, seasonal and annual mean, maximum, minimum SAT for each grid are calculated by arithmetic averages of daily temperature over the corresponding month, season or year.

4.2 Anomalies

SAT anomalies are computed as the departures of the SAT from the corresponding 1991–2020 averages.

5. References

Zhang, T., Z. J. Zhou, Z. Q. Liu, et al., 2025: The CMA global atmospheric reanalysis version 1.5 (CRA1.5). *Journal of Meteorological Research*, 39(6), 1379–1398, <https://doi.org/10.1007/s13351-025-5112-3>.

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