



# 中国气象局全球气候数据集

## CMA GLOBAL CLIMATE DATASETS

For AI, disaster prevention and mitigation, climate change etc.

Department of Data Resources, CMA  
Sep. 17, 2025



# Key Challenges & Solutions

## Disaster Prevention and Mitigation



## Addressing Climate Change



## Artificial Intelligence Applications



## Climate data products at a hundred years spatiotemporal scale

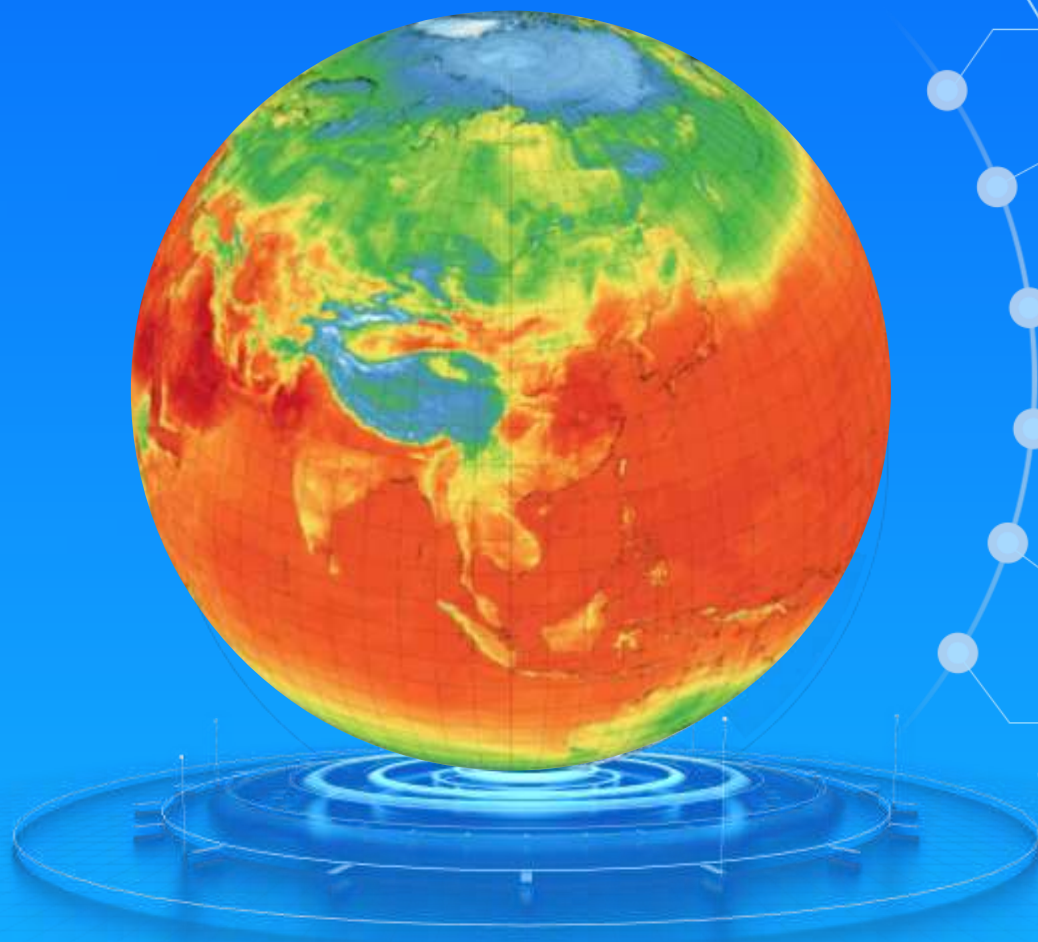
Multi-source data fusion

Numerical model assimilation

Reconstruction of historical data



# Catalogue of CMA Global Climate Datasets



**Global Surface Dataset (since 1850)**

**Global Radiosonde Dataset (since 1979)**

**Global Merged Surface Temperature (since 1850)**

**CMA ReAnalysis V1.5 (since 1979, 10KM/25KM)**

**FENGYUN Satellites Land & Radiation Dataset (since 2011)**

**FENGYUN Satellites Ocean Dataset (since 2009)**



# Global Surface & Radiosonde Datasets

## Global Surface & Radiosonde Stations

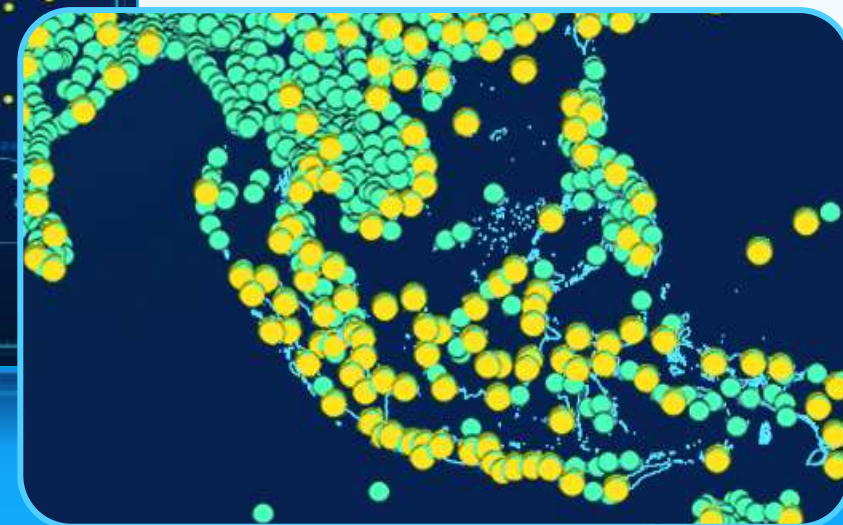


### Surface:

≈ 15,000 stations (Hourly)  
Hourly/Daily/Monthly products

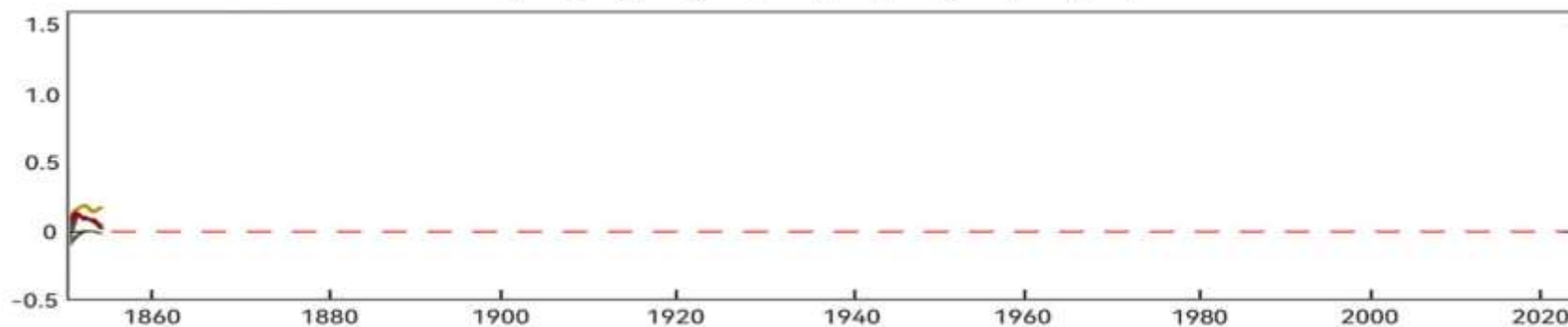
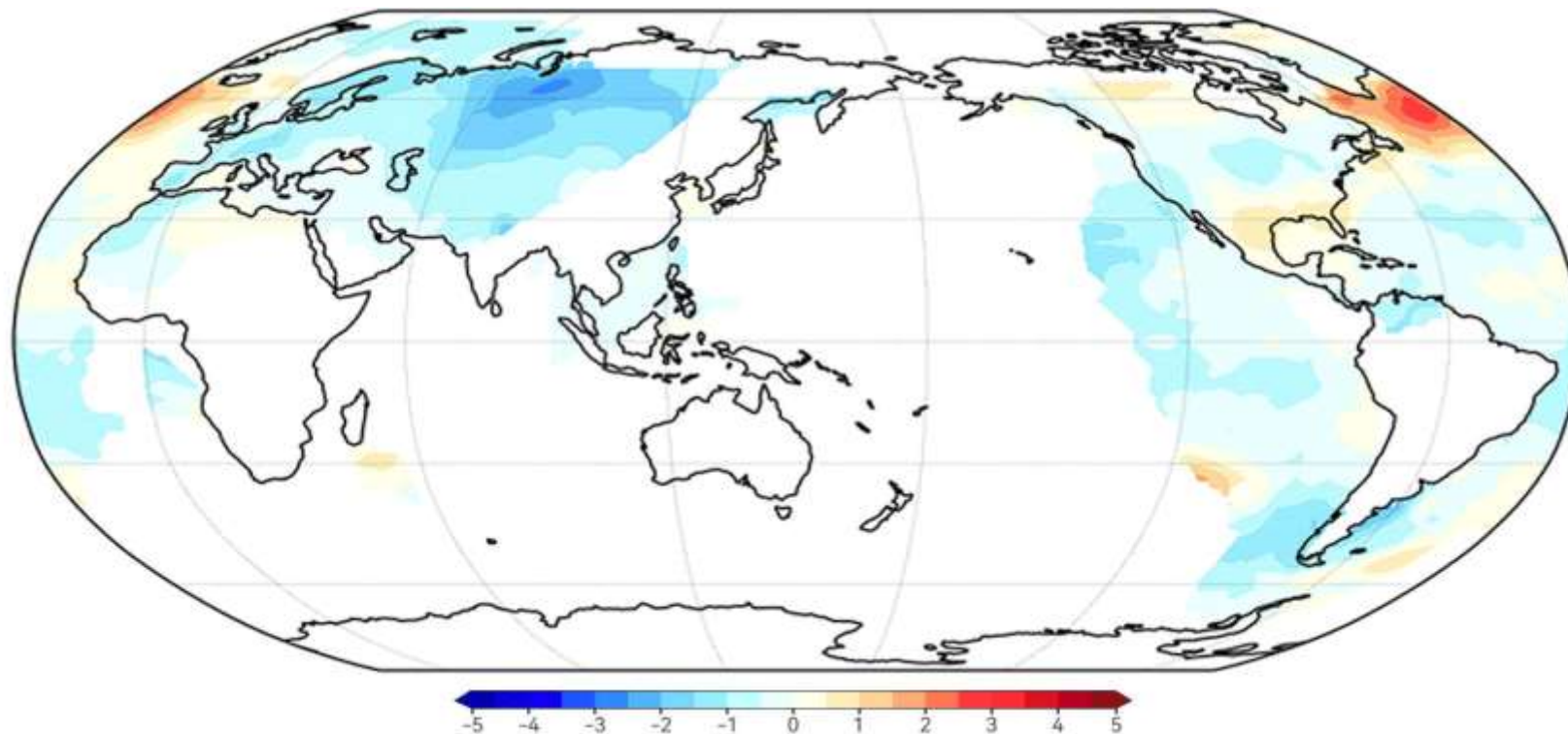
### Radiosonde:

Integrate GTS, IGRA, CFSR, GDAS  
>2200 stations  
Approx. 3% more records





# Global Merged Surface Temperature



**Global Surface  
Temperature Anomaly  
(1850-2024)**

- CMA-GMST V2.0
- HadCRUT5
- NOAA GlobalTemp v6
- GISTEMP V4
- Berkeley Earth



# CMA ReAnalysis V1.5

Since 1979

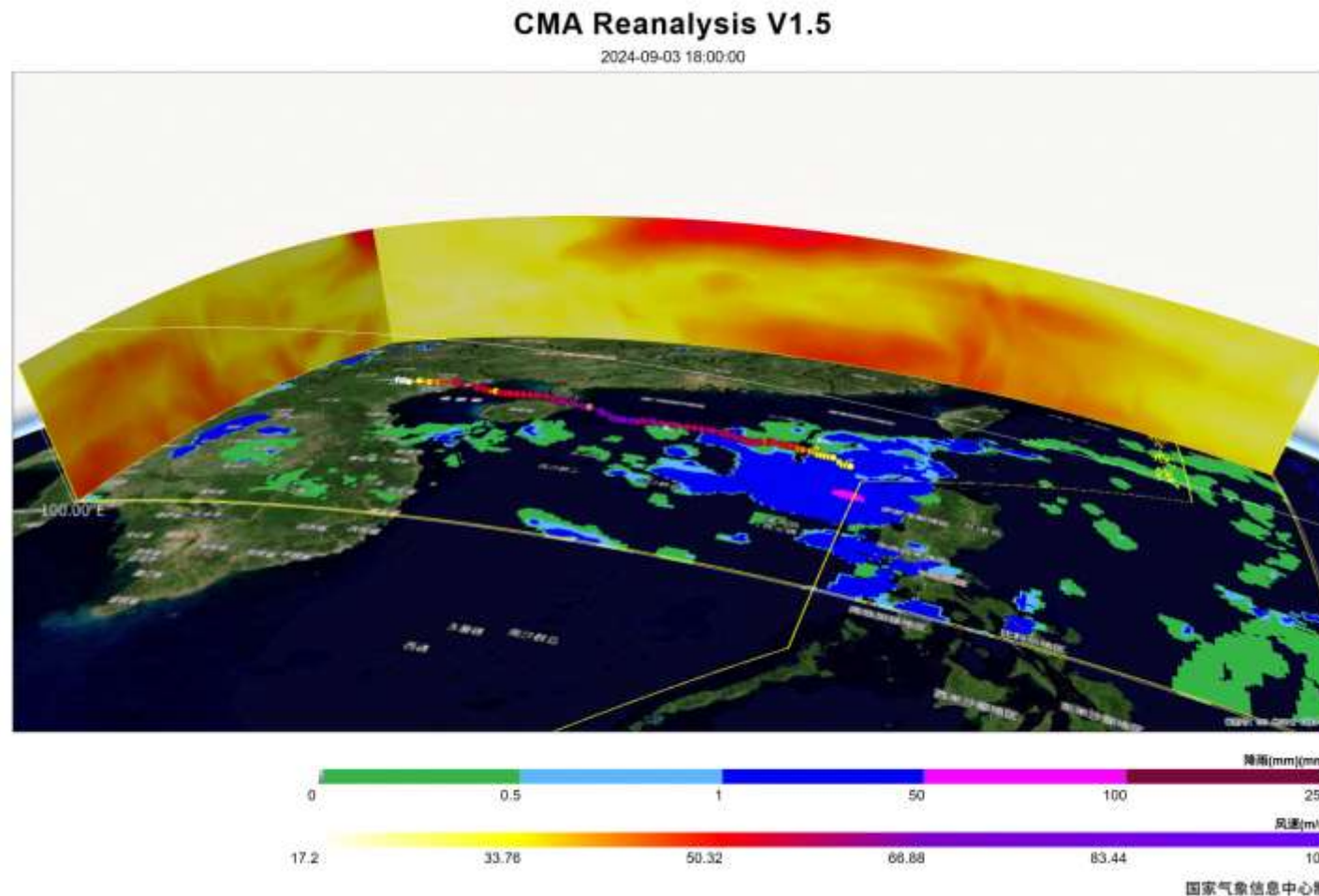
10km/25km, 47 levels

Updated with 2 hours lag

Best quality with 6-7 hours lag

## Typhoon Yagi (No. 11, 2024)

- Numbered on Sep. 1, 2024
- Delisted on Sep. 8, 2024

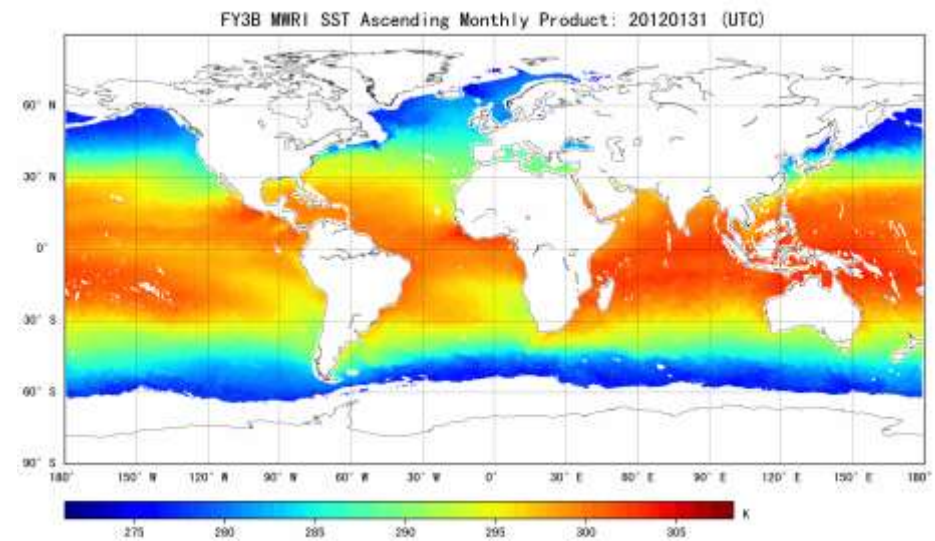
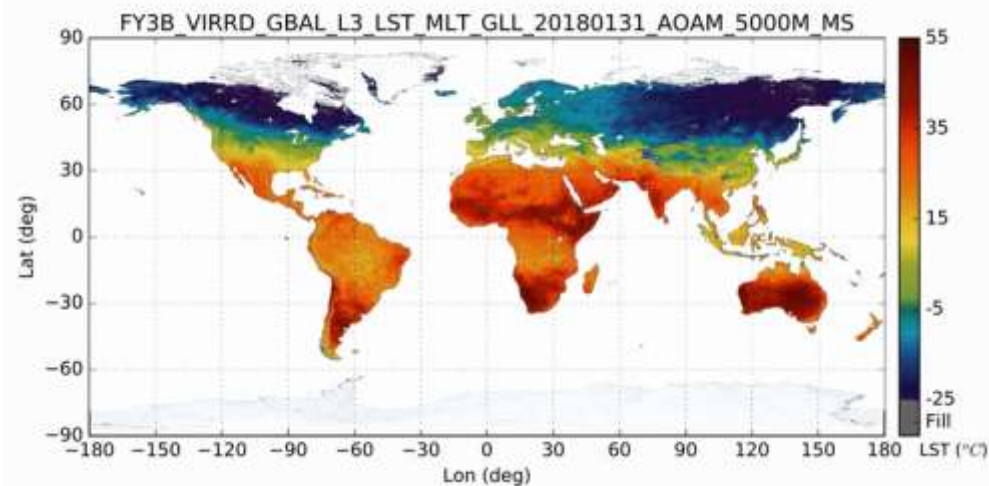
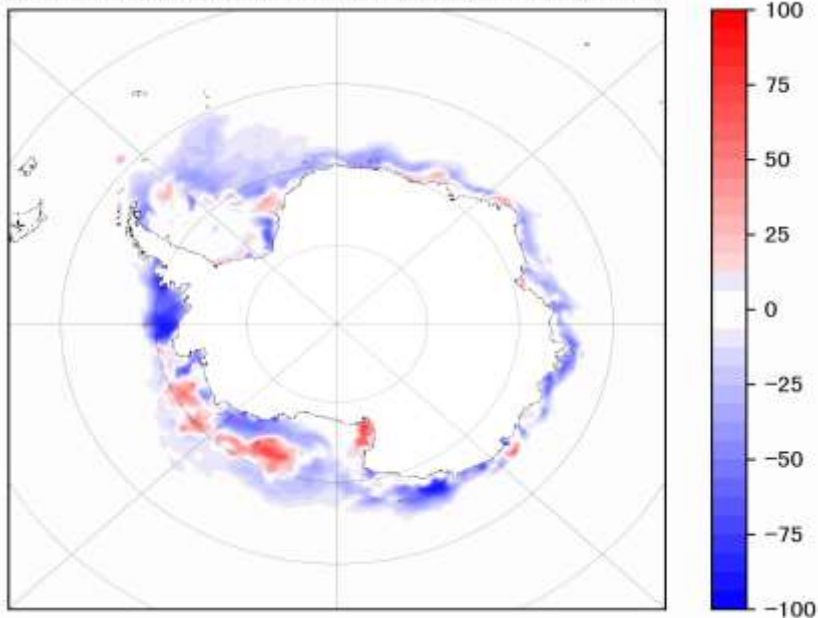




# FENGYUN Satellites Land, Radiation, Ocean Datasets

- **LST:** accuracy 2.5k
- **OLR:** stability <0.5%
- **SST:** bias <0.5K
- **Resolution:** 0.05°

Antarctic monthly sea ice concentration anomalies in Jan 2011-2023 by FY-3 MWR





# Service of CMA Global Climate Datasets



Number of  
service users

**1.3 million**



Service data  
volume

**12PB**



Number of  
countries  
served

**133**



China Meteorological Data Network  
(English Version)

<https://data.cma.cn/en>



World Meteorological Center(Beijing)  
website

<https://www.wmc-bj.net/>



FENGYUN Satellite Data Service  
(English Version)

<https://satellite.nsmc.org.cn/DataPortal/en>



# Online Data Service

## Flexible access:

Order download & SDK download.

## Authoritative data:

Global MOID codes assigned.

## User support:

Tel.: 86-10-68407499 (workday)

E-mail: [datacenter@cma.gov.cn](mailto:datacenter@cma.gov.cn)





**Welcome to use and cite CMA data.**  
**Feedback is always greatly appreciated.**  
**Initiative for jointly labeling disaster data.**

**Thank you for listening!**



# 第4届中国—东盟气象合作论坛

## THE 4<sup>TH</sup> CHINA-ASEAN METEOROLOGICAL COOPERATION FORUM

### 数智赋能气象合作 早期预警普惠民生

DIGITAL INTELLIGENCE EMPOWERS METEOROLOGICAL COOPERATION    EARLY WARNINGS BENEFIT PEOPLE'S LIVELIHOODS

主办单位：广西壮族自治区气象局  
Hosted by: Meteorological Service of Guangxi Zhuang Autonomous Region

中国气象局国际合作与培训中心  
China Meteorological Administration International Cooperation and Training Centre

中国气象学会  
Chinese Meteorological Society

协办单位：广西壮族自治区生态环境厅  
Co-Organized by: Department of Ecology and Environment of Guangxi Zhuang Autonomous Region

广西壮族自治区商务厅  
Department of Commerce of Guangxi Zhuang Autonomous Region

广西壮族自治区大数据发展局  
Big Data Development Bureau of Guangxi Zhuang Autonomous Region

2025年9月17-19日    中国·南宁  
September 17-19, 2025    Nanning, China

