A Big Earth Data Platform for Three Poles

**High-resolution tropospheric NO2 VCDs over East Asia POMINO v2.1 (2012-2020)**

1、Description

This data set contains the high-resolution tropospheric nitrogen dioxide vertical column concentration pomino v2.1 data in East Asia from 2012 to 2020. It is a new version of the data after bug fix of v2.0.1, which provides an important data basis for studying the spatial distribution characteristics and temporal change trend of tropospheric nitrogen dioxide in China. Based on the tropospheric nitrogen dioxide slant column concentration provided by KNMI, the pomino tropospheric nitrogen dioxide vertical column concentration is calculated through the tropospheric AMF retrieval algorithm developed by ourselves. The comparison with the ground-based observation data shows that the tropospheric nitrogen dioxide column concentration of pomino can better capture the day-to-day variation trend, and has better correlation with the ground-based observation data. At present, the data has been used for scientific research by many universities and scientific research institutions at home and abroad. In the future, the data set will provide more comprehensive data support for scientific research projects on the Qinghai Tibet Plateau.

2、Keywords

Theme：Nitrogen compounds,Atmosphere Remote Sensing,Atmospheric Trace Gase
Discipline：Atmosphere
Places：East Asia
Time：monthly mean, 2012-2020

3、Data details

1.Scale：None

2.Projection：

3.Filesize：74.3MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：55.0 | - |
| west：70.0 | - | east：140.0 |
| - | south：15.0 | - |

5、Time frame:None--None

6、Reference method

References to data:

LIN Jintai. High-resolution tropospheric NO2 VCDs over East Asia POMINO v2.1 (2012-2020). A Big Earth Data Platform for Three Poles, doi:10.11888/Atmos.tpdc.2718542021

References to articles:

Lin, J.T\*., Martin, R.V., Boersma, K.F., Sneep, M., Stammes, P., & Spurr, R., et al. (2014). Retrieving tropospheric nitrogen dioxide from the ozone monitoring instrument: effects of aerosols, surface reflectance anisotropy, and vertical profile of nitrogen dioxide, Atmos. Chem. Phys., 14, 1441-1461, doi:10.5194/acp-14-1441-2014

Lin, J.T\*., Liu, M.Y., Xin, J.Y., Boersma, K.F., Spurr, R., Martin, R., & Zhang, Q. (2015). Influence of aerosols and surface reflectance on satellite NO2 retrieval: seasonal and spatial characteristics and implications for NOx emission constraints, Atmospheric Chemistry and Physics, 15, 11217-11241, doi:10.5194/acp-15-11217-2015

Liu, M.Y., Lin, J.T\*., Boersma, K.F\*., Pinardi, G., Wang, Y., Chimot, J., Wagner, T., Xie, P., Eskes, H., Van Roozendael, M., Hendrick, F., Wang, P., Wang, T., Yan, Y.Y., Chen, L.L., & Ni, R.J. (2019). Improved aerosol correction for OMI tropospheric NO2 retrieval over East Asia: constraint from CALIOP aerosol vertical profile, Atmospheric Measurement Techniques, 12, 1-21, doi:10.5194/amt-12-1-2019

7、Supporting project information

Second Tibetan Plateau Scientific Expedition Program

8、Data resource provider

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