A Big Earth Data Platform for Three Poles

**Dataset of cloud observations in Arctic Alaska (1999-2009)**

1、Description

This data set of cloud observations at a site in Arctic Alaska is based on the fusion of five cloud inversion products that are well known worldwide. The temporal coverage of the data is from 1999 to 2009, the temporal resolution is one hour, and there are 512 layers vertically with a vertical resolution of 45 m. The spatial coverage is one site in Arctic Alaska, with latitude and longitude coordinates of 71°19′22.8′′N, 156°36′32.4′′ W. The remote sensing cloud inversion data products include the following official products: the all-phase cloud characteristic products produced by the Atmospheric Radiation Measurement Program of the US Department of Energy adopting a parametric method for remote sensing inversion, the ice cloud and hybrid cloud feature products obtained from the US NOAA researchers Matt Shupe and Dave Turner based on cooperative remote sensing inversion (optimization method + parametric method), the hybrid cloud feature (optimization method) products produced by Zhien Wang of the University of Wyoming, USA, the ice cloud feature (parametric method) products produced by Min Deng of the University of Wyoming, USA, and the cloud optical thickness products produced by Qilong Min of the State University of New York at Albany adopting remote sensing inversion (optimization method). The variables of the remote sensing products include cloud water effective radius, cloud water content, cloud ice effective radius, cloud ice content, cloud optical thickness, and cloud water column content; the corresponding observed inversion error ranges are approximately 10-30%, 30-60%, 10-30%, 30-60%, 10-30% and 10-20%. The data files are in the NC format, and an NC file is stored every month.

2、Keywords

Theme：Atmospheric remote sensing products,Clouds,Cloud properties,Cloud microphysics,Atmosphere Remote Sensing
Discipline：Atmosphere
Places：Alaska
Time：1999-2009

3、Data details

1.Scale：None

2.Projection：

3.Filesize：93.42MB

4.Data format：.doc

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：70.0 | - |
| west：318.0 | - | east：356.0 |
| - | south：50.0 | - |

5、Time frame:1999-07-08 16:00:00+00:00--2010-07-07 16:00:00+00:00

6、Reference method

References to data:

Dataset of cloud observations in Arctic Alaska (1999-2009). A Big Earth Data Platform for Three Poles, doi:10.11888/AtmosPhys.tpe.00000035.file2018

References to articles:

7、Supporting project information

CASEarth:Big Earth Data for Three Poles（grant No. XDA19070000）

8、Data resource provider