GRENE-ei CAAM 0.05° ×0.05° Grid Daily Precipitation in Thailand (prototype)

1. IDENTIFICATION INFORMATION

Name	GRENE-ei CAAM 0.05° ×0.05° Grid Daily Precipitation in Thailand (prototype)
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2. CONTACT

2.1 CONTACT on DATASET

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2.2.1 Data Integration and Analysis System

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4. DATASET CREATOR

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5. DATE OF THIS DOCUMENT

2023-07-27

6. DATE OF DATASET

creation : 2015-03-20

revision : 2015-11-30

7. DATASET OVERVIEW

7.1 Abstract

This is a prototype of 0.05° (lat) x 0.05° (lon) gridded data set of spatially-interpolated daily precipitation made from station precipitation in Thailand. Most of the data are obtained from the Thai Meteorological Department (TMD) by Prof. Jun Matsumoto (Tokyo Metropolitan University/JAMSTEC). We have not taken account of topographical effects, nor systematic errors of raingauges. In our product, data are given on grid boxes over land whose altitude is below 500 m only. Furthermore, those grid boxes which are far from any observing stations to be void of data. The threshold distance is predetermined by subjective decision of the analyst. The production of this data set is also a part of GRENE-ei (Green Network of Excellence, environmental information) CAAM (Climatic Changes and Evaluation of Their Effects on Agriculture in Asian Monsoon Region) of MEXT (the Ministry of Education, Culture, Sports, Science and Technology in Japan).

7.2 Topic Category(ISO19139)

climatologyMeteorologyAtmosphere

7.3 Temporal Extent

Begin Date	1979-01-01
End Date	2011-12-31
Temporal Characteristics	Daily

7.4 Geographic Bounding Box

North bound latitude	20.5
West bound longitude	97
Eastbound longitude	106
South bound latitude	5.5

7.5 Grid

Dimension Name	Dimension Size (slice number of the dimension)	Resolution Unit

column	180	3 (minute)
row	300	3 (minute)

7.6 Geographic Description

Asia

7.7 Keywords

7.7.1 Keywords on Dataset

Keyword Type	Keyword	Keyword thesaurus Name
theme	Atmosphere > Precipitation > Precipitation Amount	GCMD_science
theme	HYDROLOGY > Precipitation, ATMOSPHERIC PROCESSES > Precipitation	AGU
theme	Water, Climate	GEOSS
place	Asia > South Eastern Asia > Thailand	Country

7.7.2 Keywords on Project

7.7.2.1 Data Integration and Analysis System

Keyword Type	Keyword	Keyword thesaurus Name
theme	DIAS > Data Integration and Analysis System	No_Dictionary

7.8 Online Resource

GRENE-ei CAAM webpage : https://grene.agrid.org/

file download : https://data.diasjp.net/dl/storages/filelist/dataset:233

Maps of daily precipitation plots at stations and the gridded data (this product) : http://macroscope.world.coocan.jp/en/browse/grene/

7.9 Data Environmental Information

[Processing environment]: programs written by the data set creator in Fortran 77 and Awk, Fortran 77 program "Spheremap" version 99.8a from the University of Delaware, and Generic Mapping Tools (GMT) version 4.3.1 (Wessel and Smith), on Intel PC running Linux OS. [Data format]: The data are stored in a format of ".grd" files in each day. They are made by "xyz2grd" command of GMT.

7.10 Distribution Information

name	version	specification
NetCDF	version 3.6	Produced by program "xyz2grd" of GMT 4.3.1.

8. DATA PROCESSING

8.1 Data Processing (1)

8.1.1 General Explanation of the data producer's knowledge about the lineage of a dataset

This is a prototype of gridded data set of spatially-interpolated daily precipitation made from station precipitation in Thailand.

As the algorithm for interpolation, "Spheremap" of Willmott et al. (1985) is used. This is originally the two-dimensional spatial interpolation algorithm by Shepard (1968) which is a kind of weighted average method, but modified to work with the spherical coordinates. The algorithm is also used by Global

Precipitation Climatology Centre (GPCC, located in the German Weather Bureau) in production of their gridded data set of precipitation.

We have not taken account of topographical effects, nor systematic errors of raingauges.

In our product, data are given on grid boxes over land whose altitude is below 500 m only. Furthermore, those grid boxes which are far from any observing stations to be void of data. The threshold distance is predetermined by subjective decision of the analyst.

8.1.2 Data Source

Data Source Citation Name	Description of derived parameters and processing techniques used

9. DATA REMARKS

Note: This dataset is a "prototype" one, and it is possible to modify the data in a final version of dataset.

* We checked the source data and partially modified before entering them to the production.

* The following convention is assumed when monthly precipitation is calculated.

   Trace precipitation is assumed to be the same as zero.

* The selection of stations which are used for interpolation into the grid is as follows:

   Such stations that are off the region of the grid to be produced by more than 2 degrees of latitude or longitude are excluded.

* The following masking is done after spatial interpolation to the grid.

   Only those grid boxes which correspond to land whose altitude is below 500 m are considered valid, in order to escape an effect of mountains on precipitation. The distinction between land and sea follows that of the GPCC (Global Precipitation Climatology Centre) data set ("Monitoring Product" as of 2004). That is, we put the missing-value flag to grid boxes which are considered as oceanic boxes by GPCC.

The value in such grid boxes that are more than a certain distance farther from any stations with valid values are considered as missing. The threshold distance is defined to be equal to the difference of 1.6 degrees latitude along a meridian.

10. DATA POLICY

10.1 Data Policy by the Data Provider

This data set requires permission by the data provider (contact person) before you can download.

The content of this dataset should not be used for commercial purposes. The source should be properly acknowledged in any work obtained with this dataset. The creators of this dataset are not responsible for any loss or damage caused by using this dataset.

10.2 Data Policy by the Project

10.2.1 Data Integration and Analysis System

If data provider does not have data policy, DIAS Terms of Service (https://diasjp.net/en/terms/) and DIAS Privacy Policy (https://diasjp.net/en/privacy/) apply.

If there is a conflict between DIAS Terms of Service and data provider's policy, the data provider's policy shall prevail.

11. LICENSE

12. DATA SOURCE ACKNOWLEDGEMENT

12.1 Acknowledge the Data Provider

12.2 Acknowledge the Project

12.2.1 Data Integration and Analysis System

If you plan to use this dataset for a conference presentation, paper, journal article, or report etc., please include acknowledgments referred to following examples. If the data provider describes examples of acknowledgments, include them as well.

" In this study, [Name of Dataset] provided by [Name of Data Provider] was utilized. This dataset was also collected and provided under the Data Integration and Analysis System (DIAS), which was developed and operated by a project supported by the Ministry of Education, Culture, Sports, Science and Technology. "

13. REFERENCES

Shepard, D., 1968. A two-dimensional interpolation function for irregularly-spaced data. Proceedings, 1968 ACM National Conference, 517   524. (Reference of spatial interpolation algorithm)

Willmott, C.J., Rowe, C.M. and Philpot, W.D. 1985. Small-scale climate maps: a sensitivity analysis of some common assumptions associated with grid-point interpolation and contouring. The American Cartographer, 12, 5   16. (Reference of spatial interpolation algorithm)