CReSS Daily Simulation (around Japan 2km mesh)

1. IDENTIFICATION INFORMATION

Name	CReSS Daily Simulation (around Japan 2km mesh)
Abbreviation	CReSS_JPN20DK
DOI	doi:10.20783/DIAS.597 [https://doi.org/10.20783/DIAS.597]
Metadata Identifier	CReSS_JPN20DK20240502140133-DIAS20221121113753-en

2. CONTACT

2.1 CONTACT on DATASET

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5. DATE OF THIS DOCUMENT

2024-05-02

6. DATE OF DATASET

publication : 2020/08/20

7. DATASET OVERVIEW

7.1 Abstract

The Laboratory of Meteorology, Institute for Space-Earth Environmental Research, Nagoya University, has been performing daily high-resolution weather simulations using the cloud resolving storm model CReSS (Cloud Resolving Storm Simulator). To demonstrate how well the current model can simulate real-world weather, the results of the simulations are mainly intended for experts. This dataset is the original data from that simulation, shown on the Web page "CReSS Daily Simulation".

The area of calcuration is about 2300km by 2800km, surrounding Japan, with about 2km grid size. The map projection method is the Lambert Conformal Conic.

The actual simulations are performed prior to the actual time, but due to the limitations of the Meteorological Service Act, only results prior to the current time are made available to the public.

If you wish to use this data to conduct weather forecasting services in Japan, you must follow the appropriate procedures in accordance with the Meteorological Service Act. Please contact the Japan Meteorological Agency for more information on the law.

The simulations are calculated once a day for up to 36 hours ahead.

This dataset contains the following 17 three dimensional variables and 30 two dimensional variables, the former being output every three hours and the latter every hour.

3D Variables:

u : x components of velocity [m/s]

v : y components of velocity [m/s]

w : z components of velocity [m/s]

p : pressure [Pa]

pt : potential temperature [K]

qv : water vapor mixing ratio [kg/kg]

qc : cloud water mixing ratio [kg/kg]

qr : rain water mixing ratio [kg/kg]

qi : cloud ice mixing ratio [kg/kg]

qs : snow mixing ratio [kg/kg]

qg : graupel mixing ratio [kg/kg]

nci : cloud ice concentrations [1/kg]

ncs : snow concentrations [1/kg]

ncg : graupel concentrations [1/kg]

qt : tracer mixing ratio

tke : turbulent kinetic energy [J/kg]

zph : z physical coordinates [m]

2D variables:

us : x components of velocity at an altitude of 10m [m/s]

vs : y components of velocity at an altitude of 10m [m/s]

ps : pressure at an altitude of 1.5m [Pa]

pts : potential temperature at an altitude of 1.5m [K]

qvs : water vapor mixing ratio at an altitude of 1.5m [kg/kg]

tgs : soil and sea surface temperature [K]

hs : sensible heat over surface [W/m^2]

le : latent heat over surface [W/m^2]

rgd : global solar radiation [W/m^2]

rsd : net downward short wave radiation [W/m^2]

rld : downward long wave radiation [W/m^2]

rlu : upward long wave radiation [W/m^2]

cdl : cloud cover in lower layer

cdm : cloud cover in middle layer

cdh : cloud cover in upper layer

cdave : averaged cloud cover

usflx : surface momentum flux for x components of velocity [N/m^2]

vsflx : surface momentum flux for y components of velocity [N/m^2]

ptsflx : surface heat flux [(kg K)/(m^2 s)]

qvsflx : surface moisture flux [kg/(m^2 s)]

pcr : cloud water fall rate [m/s]

pca : accumulated cloud water fall [m]

prr : rain fall rate [m/s]

pra : accumulated rain fall [m]

pir : cloud ice fall rate [m/s]

pia : accumulated cloud ice fall [m]

psr : snow fall rate [m/s]

psa : accumulated snow fall [m]

pgr : graupel fall rate [m/s]

pga : accumulated graupel fall [m]

7.2 Topic Category(ISO19139)

climatologyMeteorologyAtmosphere

7.3 Temporal Extent

Begin Date	2013-05-26
End Date	Under Continuation
Temporal Characteristics	Hourly

7.4 Geographic Bounding Box

North bound latitude	46.463
West bound longitude	120.178
Eastbound longitude	149.518
South bound latitude	20.8597

7.5 Grid

7.6 Geographic Description

7.7 Keywords

7.7.1 Keywords on Dataset

Keyword Type	Keyword	Keyword thesaurus Name
theme	Atmosphere > Atmospheric Temperature > , Atmosphere > Precipitation > , Atmosphere > Atmospheric Phenomena >	GCMD_science

	Typhoons, Atmosphere > Clouds, Atmosphere > Atmospheric Radiation, Atmosphere > Atmospheric Water Vapor	
theme	ATMOSPHERIC PROCESSES > Mesoscale meteorology, ATMOSPHERIC PROCESSES > Convective processes, ATMOSPHERIC PROCESSES > Precipitation, ATMOSPHERIC PROCESSES > Regional modeling	AGU
theme	Weather	GEOSS
place	Asia > Eastern Asia > Japan	Country
theme	Models	GCMD_platform

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

CReSS Introduction : http://www.rain.hyarc.nagoya-u.ac.jp/tool/cress.html

CReSS Daily Simulation (Japanese Only) Original Page : http://www.rain.hyarc.nagoya-u.ac.jp/CReSS/fcst_exp.html

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file download : https://data.diasjp.net/dl/storages/filelist/dataset:597

7.9 Data Environmental Information

Each directory contains binary data files and corresponding Grads ctl files. The extension ".bin" is for the data file and ".ctl" is for the Grads ctl file. A file basename ending in "_dmp" is for 3D variables, one ending in "_mon" is for a horizontal 2D variables, "_geography" is for the geographical data. The "YYYYMMDDhhZ" part of the file name indicates the simulation start date and the data output date.

7.10 Distribution Information

name	version	specification
Fortran binary data	N/A	4byte binary (big endian)

8. DATA PROCESSING

9. DATA REMARKS

10. DATA POLICY

10.1 Data Policy by the Data Provider

This dataset is distributed under the CC BY-SA 4.0 International License.

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The data author will not guarantee that the results of the simulations that produced this dataset are correct or represent the actual weather.

No responsibility is assumed by anyone, including the creator (and all individuals and organizations involved in the creation of this dataset, and the same applies below). No liability of any kind shall be assumed by anyone, including the creator.

No one, including the creator, shall be held liable or responsible for any detriment or damage or loss (whether financial, material, personal, emotional, social or otherwise) resulting from the use of or in connection with 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

Tsuboki, K., and A. Sakakibara (2002), Large-scale parallel computing of Cloud Resolving Storm Simulator, in High Performance Computing, edited by H. P. Zima, K. Joe, M. Sato, Y. Seo, and M. Shimasaki, pp. 243-259, Springer, New York.

Tsuboki, K. (2008), High-resolution simulations of high-impact weather systems using the cloud-resolving model on the Earth Simulator, In High Resolution Numerical Modeling of the Atmosphere and Ocean, edited by K. Hamilton, and W. Ohfuchi, pp. 141-156, Springer, New York.