



CEOP Model Output for MOLTS(Model Output Location Time Series)

1. IDENTIFICATION INFORMATION

| | |
|---------------------|---|
| Name | CEOP Model Output for MOLTS(Model Output Location Time Series) |
| Abbreviation | Coordinated Energy and Water-Cycle Observation Project Model Output (MOLTS)Datasets |
| Metadata Identifier | CEOP_Model_MOLTS20230727080154-DIAS20221121113753-en |

2. CONTACT

2.1 CONTACT on DATASET

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2.2 CONTACT on PROJECT

2.2.1 Data Integration and Analysis System

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|--------------|--|
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3. DOCUMENT AUTHOR

| | |
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| Organization | Max Planck Institute for Meteorology |

4. DATASET CREATOR

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|------|---|
| Name | BoM: Bureau of Meteorology |
| Name | CPTEC: Centro de Previsao de Tempo e Estudos Climaticos |
| Name | ECMWF: European Centre for Medium-Range Weather Forecasts |

| | |
|------|---|
| Name | EMC: EPSON Meteo Center (Centro EPSON Meteo) |
| Name | GLDAS: Global Land Data Assimilation System |
| Name | GMAO: NASA Global Modeling and Assimilation Office |
| Name | JMA: Japan Meteorological Agency |
| Name | MSC: Meteorological Service Canada |
| Name | NCEP: National Centers for Environmental Prediction |

5. DATE OF THIS DOCUMENT

2023-07-27

6. DATE OF DATASET

publication : 2010-03-26

7. DATASET OVERVIEW

7.1 Abstract

Ten operational Numerical Weather Prediction (NWP) and two data assimilation centers are currently contributing analysis/assimilation and forecast model products from global and regional NWP suites, including both operational and reanalysis systems to this component of CEOP. The contributing centers include:

BoM: Bureau of Meteorology

CPTEC: Centro de Previsao de Tempo e Estudos Climaticos

ECMWF: European Centre for Medium-Range Weather Forecasts

ECPC: Experimental Climate Prediction Center

EMC: EPSON Meteo Center (Centro EPSON Meteo)

GLDAS: Global Land Data Assimilation System

GMAO: NASA Global Modeling and Assimilation Office

JMA: Japan Meteorological Agency

MSC: Meteorological Service Canada

NCEP: National Centers for Environmental Prediction

NCMRWF: National Center for Medium Range Weather Forecasting

UKMO: UK Met Office

The Max-Planck Institute for Meteorology (MPIM) in coordination with the ICSU World Data Center for Climate (WDCC) in Hamburg, Germany was designated as the CEOP model output archive center. The

WDCC is administered by the Model and Data Group (M&D) at MPIM and the German Climate Computing Center (DKRZ).

To assist with the organization of this activity during the Coordinated Enhanced Observing Period ('CEOP'), a Model Output Management Document was drafted as a guide for the participating centers to use in setting up their processes for meeting their commitments to 'CEOP'. The Guidance Document addressed the two issues of (1) the model output variables requested by 'CEOP' and (2) the two types of requested model output, namely global gridded (in GRIB format) and site-specific Model Output Location Time Series (MOLTS) at each of the 'CEOP' Reference Sites.

A new version of the Guidance Document will be compiled that clarifies what model output data will be generated by the NWP Centers and Groups contributing to the model output component of Coordinated Energy and Water Cycle Observations Project (CEOP) and how they will interface/transfer the data that will be handled and retained at the WDCC. The issues covered in the document will include: (1) global versus regional products; (2) desired assimilation output; Interval and length of free-running forecasts; (3) Operational versus reanalysis data; (4) the CEOP schedule/archive periods; (5) the number and locations of MOLTS sites; and (6) the homogenizing of the model output and metadata formats (i.e. standard parameters).

Results up to this point in the CEOP model output generation effort make it clear that the transfer aspect of the data handling effort has been progressing well. Data from all twelve Centers participating in CEOP have been received at the data archive center and has either been placed into the database at the Hamburg facility, or is in the process of being entered into the database. The current data holdings in the MPIM archive can be viewed http://www.mad.zmaw.de/fileadmin/extern/wdc/ceop/Data_timeline_L_12.pdf.

7.2 Topic Category(IS019139)

climatologyMeteorologyAtmosphere

7.3 Temporal Extent

| | |
|--------------------------|---|
| Begin Date | 2001-07-01 |
| End Date | 2004-12-31 |
| Temporal Characteristics | Depends on each NWPCs (Hourly, 3hourly, 6hourly, etc.) please see http://www.eol.ucar.edu/projects/ceop/dm/model/model_table.html for more detail |

7.4 Geographic Bounding Box

| | |
|----------------------|---------|
| North latitude bound | 71.62 |
| West longitude bound | 148.15 |
| Eastbound longitude | -156.62 |
| South latitude bound | -35.66 |

7.5 Grid

7.6 Geographic Description

7.7 Keywords

7.7.1 Keywords on Dataset

| Keyword Type | Keyword | Keyword thesaurus Name |
|--------------|---------|------------------------|
| theme | Climate | GEOSS |

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

CEOP : <http://www.ceop.net/>

CEOP Model Output Archive : <http://www.eol.ucar.edu/projects/ceop/dm/model/>

CEOP Model Output Data Gateway : <http://ceop.wdc-climate.de>

BoM : available soon

CPTEC : available soon

ECMWF(ERA40) : http://www.eol.ucar.edu/projects/ceop/dm/model/ecmwf/molts_points_external_era40.xls

ECMWF(Operations) : http://www.eol.ucar.edu/projects/ceop/dm/model/ecmwf/molts_points_external_oper.xls

ECPC(Reanalysis-II) : http://www.eol.ucar.edu/projects/ceop/dm/model/ECPC/04_Table_4_ECPC_MOLTS_Characteristics.doc

ECPC(Seasonal Forecast Model) : http://www.eol.ucar.edu/projects/ceop/dm/model/ECPC/04_Table_4_ECPC_MOLTS_Characteristics.doc

GLDAS(Mosaic Land Surface Model) : <http://www.eol.ucar.edu/projects/ceop/dm/model/gldas/README.MOLTS.txt>

GLDAS(Noah Land Surface Model) : http://www.eol.ucar.edu/projects/ceop/dm/model/gldas/README_NOAH_MOLTS.txt

GMAO(GEOS3) : http://www.eol.ucar.edu/projects/ceop/dm/model/gmao/GMAO_GEOS3_MOLTS_locations-2.xls

JMA (JMA-GSM) (location) : http://www.eol.ucar.edu/projects/ceop/dm/model/jma/MOLTS_locations_JMA.xls

JMA (JMA-GSM) (Properties) : http://www.eol.ucar.edu/projects/ceop/dm/model/jma/property_ceop_molts_JMA.xls

MSC : http://www.eol.ucar.edu/projects/ceop/dm/model/cmc/MOLTS_locations_CMC.xls

NCEP (Global Forecast System) : as of 1200 UTC, 31 May 2005 : http://www.eol.ucar.edu/projects/ceop/dm/model/ncep/MOLTS_points_best_post_may05-2.xls

NCEP (Global Forecast System) : for the period from 1200 UTC, 01 Dec 2002 through 0600 UTC, 31 May 2005 : http://www.eol.ucar.edu/projects/ceop/dm/model/ncep/MOLTS_points_best_pre_may05.xls

NCMRWF : http://www.eol.ucar.edu/projects/ceop/dm/model/ncmrwf/MOLTS_locations_NCMRWF.xls

UK Met Office : http://www.eol.ucar.edu/projects/ceop/dm/model/ukmo/UKMO_molts_locations_new.xls

EMC : available soon

7.9 Data Environmental Information

7.10 Distribution Information

| name | version | specification |
|-------------|----------------|--------------------------|
| netCDF | no information | BMRC, ECPC |
| IEEE Binary | no information | CPTEC, NCEP |
| ASCII | no information | ECMWF, GLDAS, JMA, UKMet |

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

No information

8.1.2 Data Source

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

9. DATA REMARKS

10. DATA POLICY

10.1 Data Policy by the Data Provider

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

BMRC

Seaman, R. W. Bourke, P. Steinle, T. Hart,, G. Embery, M. Naughton, and L. Rikus, 1995: Evolution of the Bureau of Meteorology’s global assimilation and prediction system. Part 1: analysis and initialisation. *Aust. Met. Mag.*, 44, 1-18.

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CPTEC

Cavalcanti IFA, Marengo JA, Satyamurty P, Nobre CA, Trosnikov I, Bonatti JP, Manzi AO, Tarasova T, Pezzi LP, D’Almeida C, Sampaio G, Castro CC, Sanches MB, Camargo L, 2002: Global climatological features in a simulation using the CPTEC-COLA AGCM. *J. Climate*, 15(21), 2965-2988

ECPC

Ruane, A.C., and J.O. Roads, 2007: The diurnal cycle of water and energy over the continental United States from three reanalyses. *J. Meteor. Soc. Jpn.* 85A, 117-143.

ECPC SFM

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JMA

Japan Meteorological Agency, 2007: Outline of the operational numerical weather prediction at the Japan Meteorological Agency. Appendix to WMO numerical weather prediction progress report. available on <http://www.jma.go.jp/jma/jma-eng/jma-center/nwp/outline-nwp/index.htm>

MSC

For the atmospheric model GEM that was used for CEOP

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For the particular configuration of the global system that was used for CEOP:

Bélair, S., J. Mailhot, C. Girard, and P. Vaillancourt, 2005: Boundary layer and shallow cumulus clouds in a medium-range forecast of large-scale weather system. *Mon. Wea. Rev.*, 133, 1938-1960.

Bélair, S., M. Roch, A.-M. Leduc, P.A. Vaillancourt, S. Laroche, and J. Mailhot, 2008: Medium-range quantitative precipitation forecasts from Canada's new 33-km deterministic global operational system. *Wea. Forecasting* (conditionally accepted, but the revisions required are small).

NCEP_GFS

Global Climate and Weather Modeling Branch, EMC, Camp Springs, Maryland, 2003: The GFS Atmospheric Model. NCEP Office Note 442, U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service, National Centers for Environmental Prediction, 4700 Silver Hill Road, Mail Stop 9910, Washington D.C. 20233-9910

UK Met Office

Milton SF, Earnshaw P, 2007: Evaluation of surface water and energy >> cycles in the Met Office global NWP model using CEOP data. *JMSJ*, 85A, >> 43-72