DIAS Digital Typhoon Dataset

1. IDENTIFICATION INFORMATION

Name	Digital Typhoon Dataset
DOI	doi:10.20783/DIAS.664 [https://doi.org/10.20783/DIAS.664]
Metadata Identifier	DigitalTyphoon20231105235443-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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5. DATE OF THIS DOCUMENT

2023-11-05

6. DATE OF DATASET

creation : 2023-11-05

7. DATASET OVERVIEW

7.1 Abstract

The "Digital Typhoon Dataset" is a dataset of meteorological satellite images and the best track of typhoons in the Northwest Pacific basin. The meteorological satellite imagery is created from infrared imagery (11 micrometers) from geostationary meteorological satellites Himawari 1 to 9 by a map projection (Lambert azimuthal equal-area) of a 1250 km radius centered on the typhoon. The best track is created from the best track data published by the Japan Meteorological Agency by interpolating it into hourly data. As of October 2023, it consists of 189364 images for 1099 typhoons from 1978 to 2022 and will be updated annually. This is a particularly useful dataset for machine learning, and the official dataset page explains its use for machine learning.

7.2 Topic Category(ISO19139)

climatologyMeteorologyAtmosphere

7.3 Temporal Extent

Begin Date	1978
End Date	Under Continuation
Temporal Characteristics	Hourly

7.4 Geographic Bounding Box

North bound latitude	70
West bound longitude	100
Eastbound longitude	180
South bound latitude	0

7.5 Grid

7.6 Geographic Description

7.7 Keywords

7.7.1 Keywords on Dataset

Keyword Type	Keyword	Keyword thesaurus Name
theme	ATMOSPHERIC PROCESSES > Tropical meteorology	AGU
theme	Earth Observation Satellites > GEOSTATIONARY SATELLITES	GCMD_platform
theme	Weather, Disasters, Climate	GEOSS
discipline	machine learning	No_Dictionary

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

Official page of the "Digital Typhoon Dataset" : http://agora.ex.nii.ac.jp/digital-typhoon/dataset/

File download : https://data.diasjp.net/dl/storages/filelist/dataset:664

7.9 Data Environmental Information

7.10 Distribution Information

name	version	specification
HDF5	5	
CSV	RFC 4180	

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

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

The attribution of the dataset required for the CC BY license is as follows.

Digital Typhoon dataset (National Institute of Informatics) doi: https://doi.org/10.20783/DIAS.664

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

Asanobu KITAMOTO, Jared HWANG, Bastien VUILLOD, Lucas GAUTIER, Yingtao TIAN, Tarin CLANUWAT, "Digital Typhoon: Long-term Satellite Image Dataset for the Spatio-Temporal Modeling of Tropical Cyclones", NeurIPS 2023 Datasets and Benchmarks (Spotlight), 2023