


Prediction for coastal strong current

1. IDENTIFICATION INFORMATION

Name	Prediction for coastal strong current
Metadata Identifier	Sicat_kyuchu20221122154041-DIAS20221121113753-en

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

2022-11-22

6. DATE OF DATASET

creation : 2020-12-22

7. DATASET OVERVIEW

7.1 Abstract

This data set shows characteristics change of ‘Kyucho’ caused by global warming. The Kyucho is Japanese word used among fisherman, means coastal strong current with potential of destroying fishing set-nets set along the Japanese coast. We used Global warming calculation product calculated by using SI-CAT02 that was ocean model whose horizontal resolution was 2km provided by Si-cat project.

We adopted extracting method of Kyucho used for ‘Realtime prediction system of Kyucho’ operated by Fisheries Research Agency Japan to extract Kyucho event from the SI-cat02 product. Followings are outline of the method: 1) Averaged value and standard deviation in each grid were estimated by using data from 2001 to 2014 calculated by hindcast calculation version of Si-cat02; 2) Current speeds calculated by prediction/global warming calculation version of Si-cat02 were standardized by using 2 values indicated in 1) (The standardized vale was called Kyucho index). Temporal resolution of the current data of Si-cat02 was 1 hour.

4 values were estimated: (1) Strength of Kyucho, (2) Frequency of Kyucho occurrence, (3) Duration of Kyucho threat and (4) Month with highest frequency of Kyucho event.

Following shows the data stored:

(0)Kyucho Index

Kyucho Index (binary)

kyucho/kindex

└── kindex_YYYY_z08.out (YYYY=year)

Current speed of current averaged from 2006 to 2010 (binary)

These were used for Kyscho index calculation

kyucho/uvave_sd

└── uvmagnitude_aveall_k08_2006-2010.out

Standard deviation current from current averaged from 2006 to 2010(binary)

These were used for Kyscho index calculation

kyucho/uvave_sd

└── uv_sdall_k08_2006-2010.out

(1)Strength of Kyucho (Maximum value of Kyucho Index)

Time series of strength of Kyucho of each region (text)

Yearly averaged values within each region

kyucho/kindex_amplitude_timeseries

└── ??*.dat (?:Number of region, *:Name of region)

Increasing trends of Kyucho strength caused by global warming (binary)

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# Trend value estimated by linear regression by using kindex_amplitude_timeseries
kyucho/kindex_amplitude
└── YBGN-YEND 08.bin (Trend values between YBGN and YEND)

(2) Frequency of Kyucho occurrence
# Frequency of Kyucho through a year (binary)
# Count number of Kyucho event whose Kyucho Index was over 3
kyucho/count_kindex
└── threshold3.0_YYYY_z08.out (YYYY=year)
# Time series of frequency of Kyucho of each region (text)
kyucho/kindex_frequency_timeseries
└── ??_*.dat (?:Number of region, *:Name of region)

# Increasing trends of Kyucho frequency caused by global warming (binary)
# Trend value estimated by linear regression by using kindex_frequency_timeseries
kyucho/kindex_frequency
└── YBGN-YEND 08.bin (Trend values between YBGN and YEND)

(3) Duration of Kyucho threat
# Duration of Kyucho threat [month] (binary)
# Averaged values of duration of Kyucho threat between YBGN and YEND. Durations of Kyucho threat
were determined by quartile deviations estimated by using Kyucho event whose Kyucho Index was
over 3 in each year.
kyucho/kindex_period
└── YBGN-YEND.bin (Averaged values between YBGN and YEND)

# Increasing of duration of Kyucho threat caused by global warming [month] (binary)
# Increasing of kindex_period caused by global warming
kyucho/kindex_period_diff
└── YBGN2-YEND2_YBGN1-YEND1.bin (Values obtained by subtracting (YBGN1-YEND1) from (YBGN2-
YEND2))

(4) Month with highest frequency of Kyucho event
# Month with highest frequency of Kyucho event [month] (binary)
# Averaged values of months with highest frequency of Kyucho event between YBGN and YEND. Months
with highest frequency of Kyucho event were chosen as months with median of Kyucho event whose
Kyucho Index was over 3 in each year.

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Averaged values of months with highest frequency of Kyucho event between YBGN and YEND.

kyucho/kindex_month

└── YBGN-YEND.bin (Averaged values between YBGN and YEND)

Change of months with highest frequency of Kyucho event [month] (binary)

Change of kindex_month caused by global warming

kyucho/kindex_month_diff

└── YBGN2-YEND2_YBGN1-YEND1.bin (Values obtained by subtracting (YBGN1-YEND1) from (YBGN2-YEND2))

7.2 Topic Category(ISO19139)

climatologyMeteorologyAtmosphere

environment

oceans

7.3 Temporal Extent

Begin Date	2006-01-01
End Date	2095-12-31

7.4 Geographic Bounding Box

North latitude bound	47.53
West longitude bound	122.55
Eastbound longitude	150.05
South latitude bound	23.67

7.5 Grid

Dimension Name	Dimension Size (slice number of the dimension)	Resolution Unit
time		1 (month)
row		2 (km)

7.6 Geographic Description

7.7 Keywords

7.7.1 Keywords on Dataset

Keyword Type	Keyword	Keyword thesaurus Name
theme	OCEANOGRAPHY PHYSICAL > Currents	AGU

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

filedownload : <https://data.diasjp.net/dl/storages/filelist/dataset:626>

7.9 Data Environmental Information

7.10 Distribution Information

name	version	specification
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8. DATA PROCESSING

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

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