

# BlueMap Marine Weather Data API User Manual

[Data Collection](#) · [Metadata Index](#) · [API Request Guide](#) · [Variable Reference](#)

✓ Status: Active

Version: v0.6

ECMWF Open Data, NOAA GFS

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# 01

## Data Characteristics

*Data Characteristics*

# 1. Data Characteristics (Data Characteristics)

## ① prediction Time Series Data

This dataset is **forecast time series data**.

All data is organized around a specific **run time**,  
and is structured as

future forecast **prediction steps**.

The screenshot shows a file browser interface for the directory `/noaa/gfs/2026/04/08/18Z/original/DIRPW`. The path `2026 / 04 / 08 / 18Z` is highlighted in red and labeled "Run Time". Below the path, there is a "Parent Directory" link. The main content area lists three files, each with a folder icon and the name `original_DIRPW_20260408_18Z_step000 grib2`, `original_DIRPW_20260408_18Z_step003 grib2`, and `original_DIRPW_20260408_18Z_step006 grib2`. The `step` part of each filename is highlighted in red and labeled "Forecast Step".

## ② Run Time and Step Concept

**Run time**

The reference time when the forecast calculation starts

**Step**

The number of hours after run time that the forecast represents

**Valid time**

The actual forecast time, calculated as run time + step\_hours — valid time

**Example**

`run_time_utc` 2025-07-16T00:00:00Z

`step_hours` 24

`step_hours` 2025-07-17 00:00 (UTC)

→ In other words,,

2025-07-16T00:00:00Z forecast, step 24step means :

2025-07-17 00:00 (UTC)

# 02

## Data Source

*Source*

## 2. Data Source (Source)

### ECMWF

#### Source Data

ECMWF Open Data

#### prediction Model

IFS (source=ecmwf, model=ifs)

#### Available Variables

Atmosphere wind\_speed\_10m, wind\_dir\_10m

Ocean Swh, mwp, mwd

### NOAA GFS

#### Source Data

NOAA GFS (Global Forecast System)

#### prediction Model

GFS (source=noaa, model=gfs)

#### Available Variables

Atmosphere WIND, WDIR

Ocean HTSGW, PERPW, DIRPW, UGRD, VGRD

### source / model – API Parameter Mapping Table

source	model	Description
ecmwf	ifs	ECMWF IFS (Atmosphere + Waves)
noaa	gfs	NOAA GFS (Atmosphere + Waves)

# 03

## Forecast Step Intervals

*Forecast Step Intervals*

# 3. Forecast Step Intervals

## ECMWF IFS

**00Z / 12Z (Long-range forecast, up to 15 days)**

0 ~ 144 step    3hour interval

150 ~ 360 step    6hour interval

**06Z / 18Z (Short-range forecast, up to 6 days)**

0 ~ 144 step    3hour interval

=> No further steps (144 step is the maximum))

## NOAA GFS

**00Z / 06Z / 12Z / 18Z (up to 16 days)**

0 ~ 384 step    3hour interval

**ECMWF: up to 15 days | NOAA: up to 16 days**

# 04

## Available Variables

*Sources · Variables · Direction Rules · Variable Details*

# 5. Variables

## Atmosphere

- Eastward Wind Component
- Northward Wind Component
- Wind Direction
- Wind Speed

## Ocean

- Eastward Current Component
- Northward Current Component
- Significant Wave Height
- Wave Period (Mean, Peak)
- Wave Direction (Mean, Peak)

## 5. Variables (ECMWF IFS)

Category	Variable Name	Description	Unit	direction	Description
Atmosphere	10u	Eastward Wind Component	m/s	from	East(East) direction wind component ((height: 10 m m above ground))
Atmosphere	10v	Northward Wind Component	m/s	from	North(North) direction wind component ((height: 10 m m above ground))
Atmosphere	wind_dir_10m	wind direction	degree	from	Ex) If value is 225° direction — wind coming from 225degrees (e.g. 225° = SW wind)
Atmosphere	wind_speed_10m	Wind Speed	m/s	-	Wind Speed
Ocean	swh	Significant Wave Height	m	-	Average of the top 30% of wave heights ~ Average of the top 30% of wave heights, 30% (measured from trough to crest)
Ocean	mwd	Mean Wave Direction	degree	from	Direction from which waves are propagating. Ex) If value is 225° direction — wind coming from 225degrees direction
Ocean	mwp	Mean Wave Period	s	-	Shorter period = narrower wave spacing

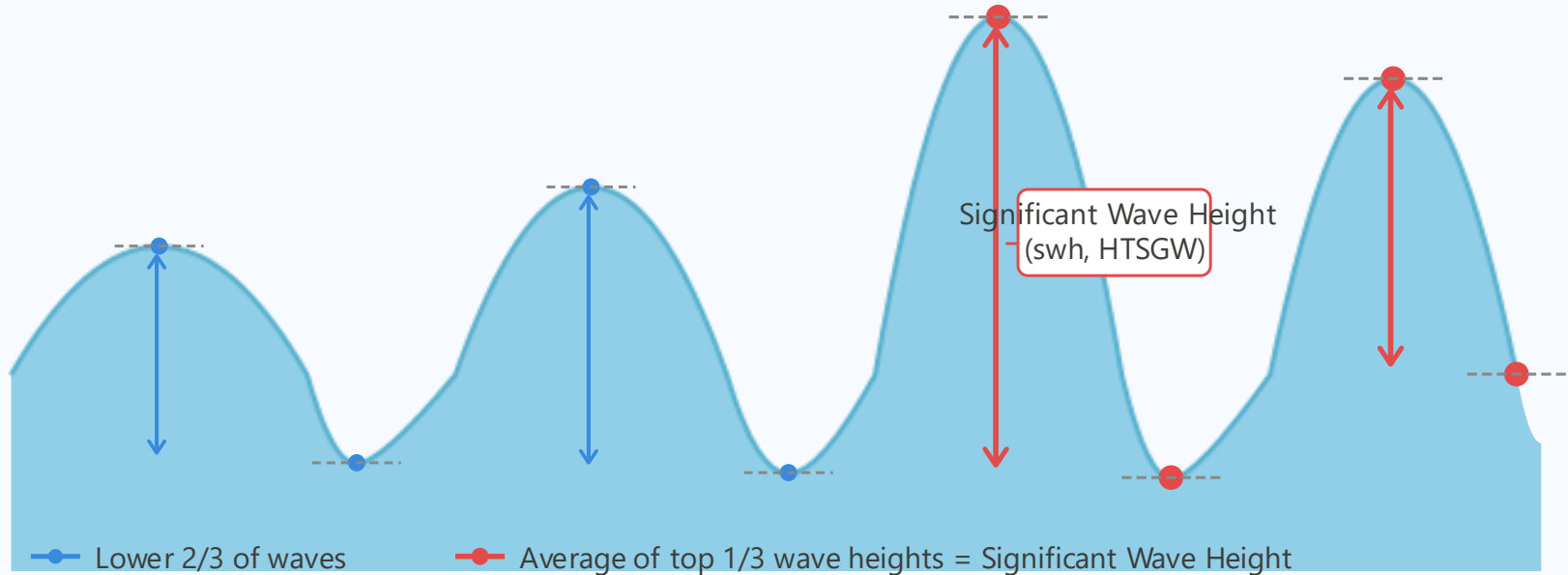
## 5. Variables (NOAA GFS)

Category	Variable Name	Description	Unit	direction	Description
Atmosphere	WDIR	wind direction	degree	from	Ex) If value is 225° direction — wind coming from 225degrees (e.g. 225° = SW wind)
Atmosphere	WIND	Wind Speed	m/s	-	Wind Speed
Ocean	HTSGW	Significant Wave Height	m	-	Average of the top 30% of wave heights ~ Average of the top 30% of wave heights, 30% (measured from trough to crest)
Ocean	DIRPW	Peak Wave Direction	degree	from	Direction from which waves are propagating. Ex) If value is 225° direction — wind coming from 225degrees direction
Ocean	PERPW	Peak Wave Period	s	-	Shorter period = narrower wave spacing
Ocean	UGRD	East Current ComponentComponent	m/s	from	East(East) direction current component (from)
Ocean	VGRD	North Current ComponentComponent	m/s	from	North(North) direction current component (from)

# 5. Significant Wave Height's Definition

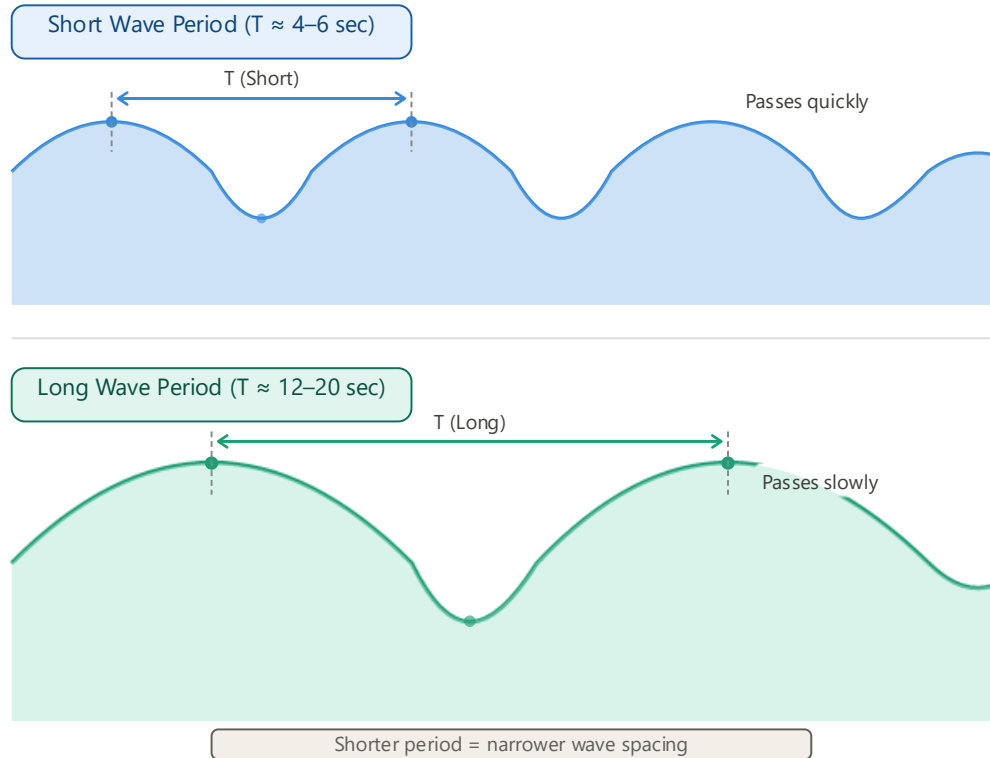
## Significant Wave Height (Significant Wave Height)

Average of the top 30% of wave heights from trough to crest (lowest to highest point)

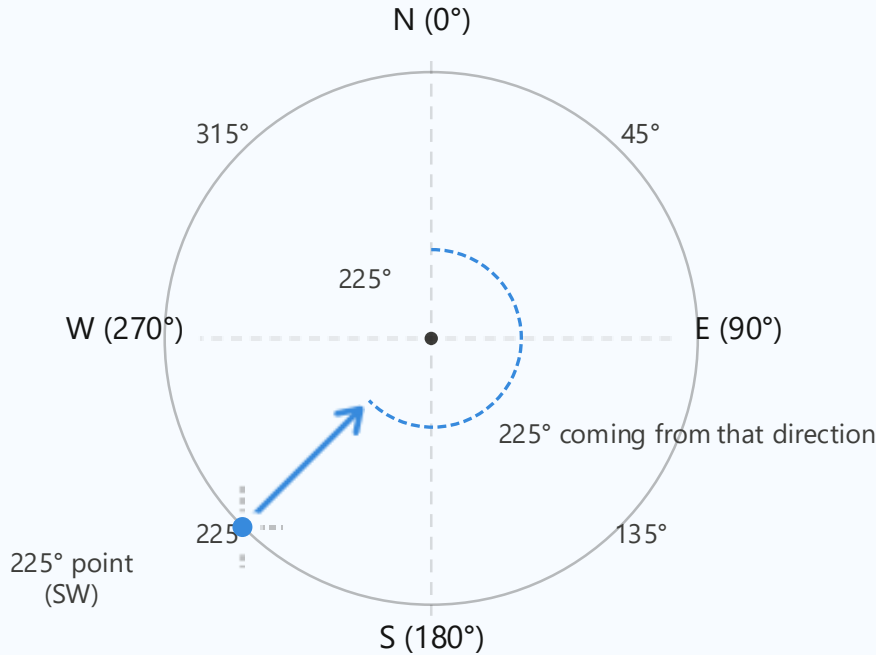


# 5. Definition: Wave Period

Wave Period ((time between successive wave crests))



# 5. direction – from Definition



## Definition of Definition

Example: if value is 225° (Southwest)

from

Coming FROM 225°  
→ Wind / waves coming from the southwest

to

Going TOWARD 225°  
→ Wind / waves moving toward the southwest

All data from current sources uses only from direction direction

Mean Wave Direction (mwd)

Mean Wave Direction from direction

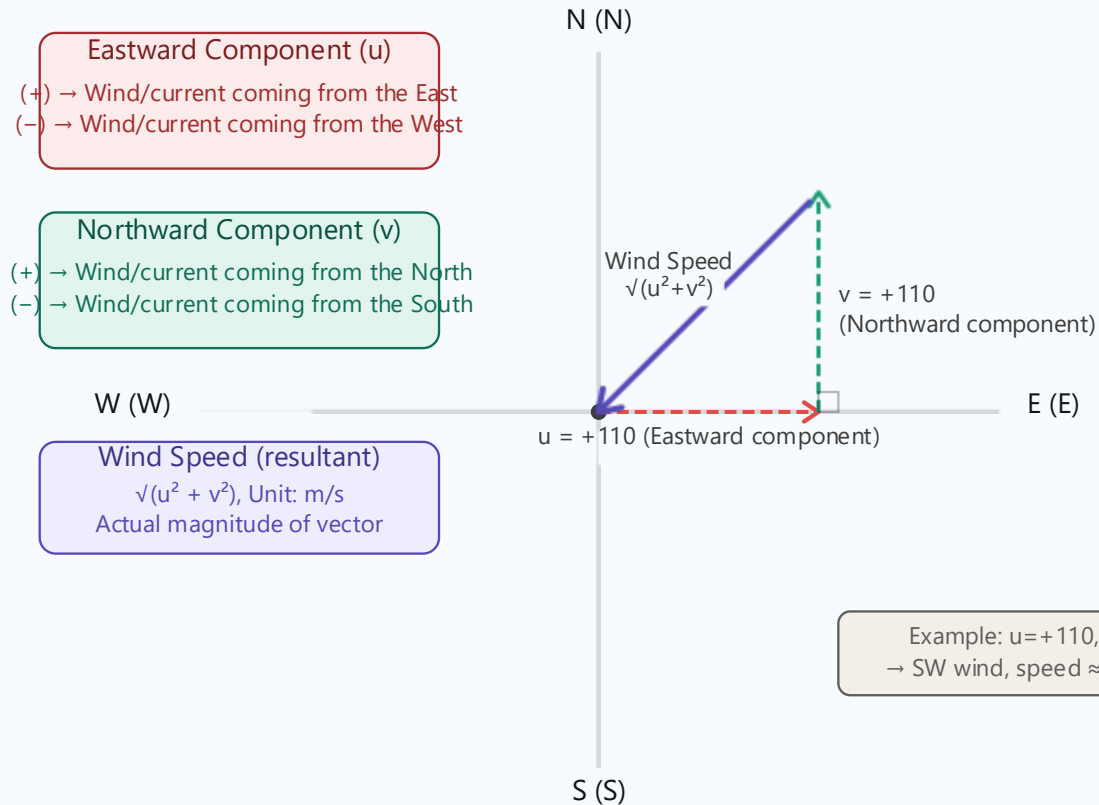
Peak Wave Direction (DIRPW)

Direction of peak wave energy from direction

Wind Direction

Direction from which wind is blowing from direction

# 5. Variables — Eastward/Northward Wind and Current Components (U/V)



## Component variables use all from

EastComponent (+)

Indicates easterly wind —, westward wind is dominant

NorthComponent (+)

Indicates northerly wind —, southward wind is dominant

Example:  $u = +110$ ,  $v = +110$   
→ SW wind, speed  $\approx 155.6$  m/s

# 05

## How to Browse the Metadata Index

*Step-by-Step Directory Browser*

# 5. Metadata Index — STEP 1: Getting Started

1 <http://weather-api.bmap.kr/> to open the API home page

Optimal-LOADS • Consortium Preview

Metadata Index API Documentation

OPTIMAL-LOADS • CONSORTIUM PREVIEW

## BLUEMAP Marine Weather Data Inventory User Manual

This page is the **user guide** for the BLUEMAP Marine Weather Data Inventory service.

✓ Status: Active   ● Version: v0.6   ● Data Sources: ECMWF Open Data, NOAA GFS

**NAVIGATION**  
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**Table of Contents**

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**OVERVIEW**  
Service Overview

This service uses **ECMWF Open Data** and **NOAA GFS** data. ECMWF dataset overview and policies: [ECMWF Open Data](#)  
NOAA GFS data: [NOAA GFS](#)

This demo collects and stores **global gridded data** based on **ECMWF Open Data** and **NOAA GFS**, and provides (metadata index), a map preview, and a lightweight API.

- Global gridded forecast datasets (Atmosphere + Wave) — ECMWF & NOAA
- Static metadata index + preview
- Lightweight API for front-end widgets
- Derived variables: wind\_speed\_10m, wind\_dir\_10m (FROM-direction)
- Meta API: `/api/sources`, `/api/variables`

⚠ This document is for demonstration purposes. The coverage (time range / resolution / latency) may change depending on environment.

2 Metadata Index button to go to the directory page

Optimal-LOADS • Consortium Preview

Manual API Documentation

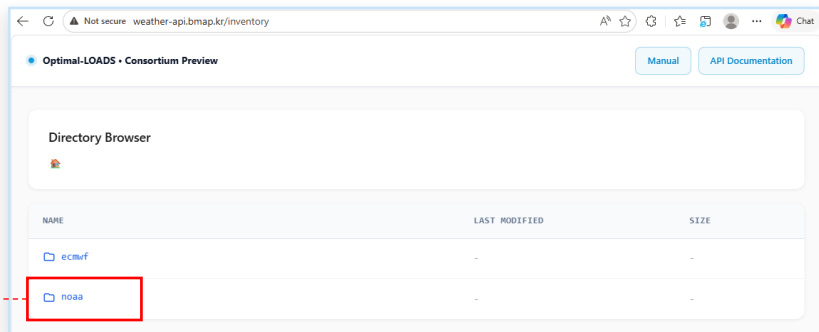
### Directory Browser

NAME	LAST MODIFIED	SIZE
<a href="#">ecmwf</a>	-	-
<a href="#">noaa</a>	-	-

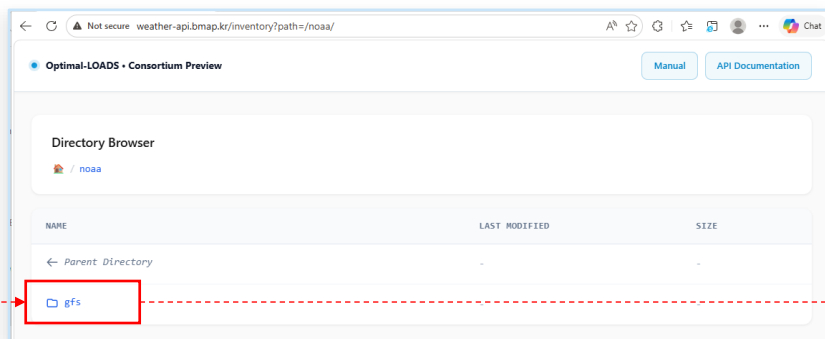
Currently receiving ECMWF IFS and NOAA GFS Wave data only  
Click ecmwf or noaa depending on the model you want

# 5. Metadata Index — STEP 2-3: Select Model · Year · Month

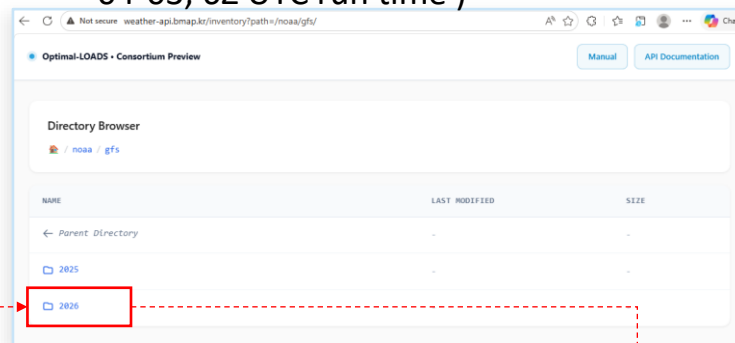
3 In this example, we will select noaa



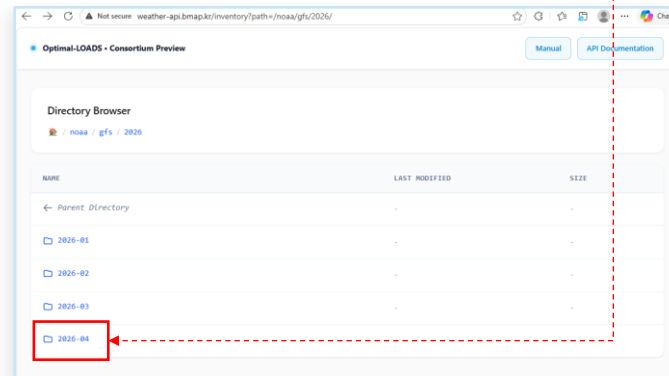
4 Click NOAA's gfs model



5 Click 2026 (In this example, we will select : 2026-04-03, 6Z UTC run time )



6 Click 2026-04



## 5. Metadata Index — STEP 4-5: Select Month · Day · Run Time

Optimal-LOADS · Consortium Preview

Manual API Docum

Directory Browser

/ noaa / gfs / 2026 / 04

NAME	LAST MODIFIED	SIZE
← Parent Directory	-	-
2026-04-01	-	-
2026-04-02	-	-
2026-04-03	-	-

7 Click 2026-04-03

Optimal-LOADS · Consortium Preview

Manual API Documentation

Directory Browser

/ noaa / gfs / 2026 / 04 / 03 / 06Z

NAME	LAST MODIFIED	SIZE
← Parent Directory	-	-
original	-	-

9 Click original

Optimal-LOADS · Consortium Preview

Manual API Documentation

Directory Browser

/ noaa / gfs / 2026 / 04 / 03

NAME	LAST MODIFIED	SIZE
← Parent Directory	-	-
00Z	-	-
06Z	-	-
12Z	-	-
18Z	-	-

8 Click 06 UTC run time  
This means:  
viewing forecast files for 2026-04-03, 6Z UTC run time

Step 9 is for selecting `dataset_code`

There are two types: `original` / `computed`


`original`

Raw files provided directly by the model, without any processing

`computed`

original Takes some original variables and calculates new derived variables (e.g., eastward wind component, and northward wind component are used to calculate wind direction, wind and speed)

## 5. Metadata Index — STEP 6-7: Select original & Choose Variable



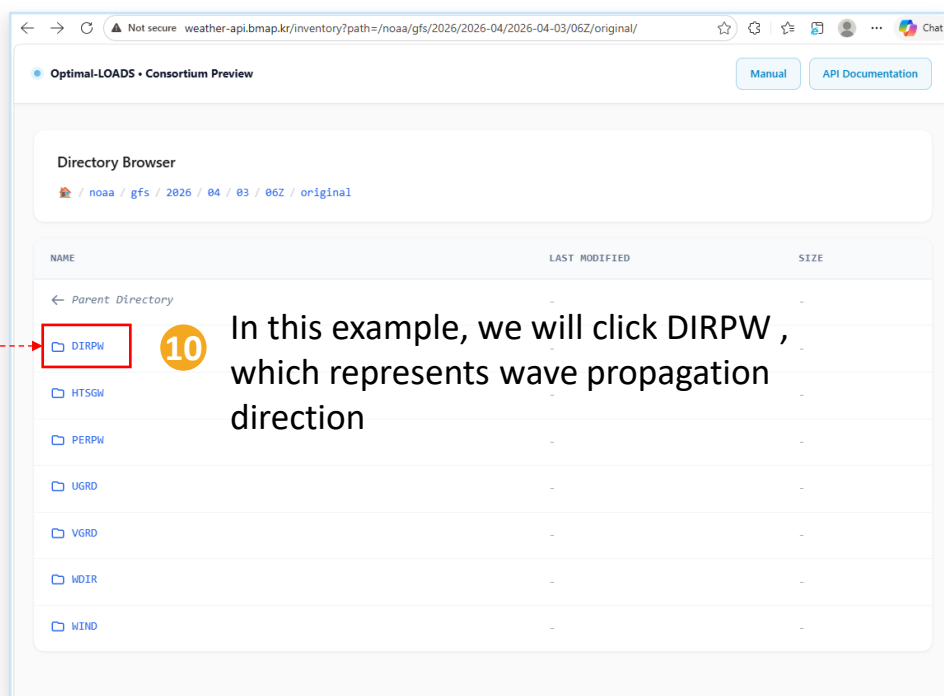
Optimal-LOADS • Consortium Preview Manual API Documentation

Directory Browser

[/ noaa / gfs / 2026 / 04 / 03 / 06Z](#)

NAME	LAST MODIFIED	SIZE
<a href="#">← Parent Directory</a>	-	-
<a href="#">original</a>	-	-

**9** original Click



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Directory Browser

[/ noaa / gfs / 2026 / 04 / 03 / 06Z / original](#)

NAME	LAST MODIFIED	SIZE
<a href="#">← Parent Directory</a>	-	-
<a href="#">DIRPW</a>	-	-
<a href="#">HTSGW</a>	-	-
<a href="#">PERPW</a>	-	-
<a href="#">UGRD</a>	-	-
<a href="#">VGRD</a>	-	-
<a href="#">WDIR</a>	-	-
<a href="#">WIND</a>	-	-

**10** In this example, we will click DIRPW , which represents wave propagation direction

# 5. Metadata Index — STEP 8: Select API Request Method

Optimal-LOADS • Consortium Preview

Manual API Documentation

Directory Browser

noaa / gfs / 2026 / 04 / 03 / 06Z / original / DIRPW

NAME	LAST MODIFIED	SIZE
← Parent Directory	-	-
original_DIRPW_20260403_06Z_step000.grib2	03-Apr-2026 10:16	1.2M
original_DIRPW_20260403_06Z_step003.grib2	03-Apr-2026 10:16	1.2M
original_DIRPW_20260403_06Z_step006.grib2	03-Apr-2026 10:16	1.2M
original_DIRPW_20260403_06Z_step009.grib2	03-Apr-2026 10:16	1.2M
original_DIRPW_20260403_06Z_step012.grib2	03-Apr-2026 10:16	1.2M
original_DIRPW_20260403_06Z_step015.grib2	03-Apr-2026 10:16	1.2M
original_DIRPW_20260403_06Z_step018.grib2	03-Apr-2026 10:16	1.2M
original_DIRPW_20260403_06Z_step021.grib2	03-Apr-2026 10:16	1.2M
original_DIRPW_20260403_06Z_step024.grib2	03-Apr-2026 10:16	1.2M
original_DIRPW_20260403_06Z_step027.grib2	03-Apr-2026 10:16	1.2M
original_DIRPW_20260403_06Z_step030.grib2	03-Apr-2026 10:16	1.2M
original_DIRPW_20260403_06Z_step033.grib2	03-Apr-2026 10:16	1.2M

11 In this example, We will view 27 step data

The model generates forecast files starting at 0hour ((when the forecast starts)) at 3hour intervals  
Up to 16 days ahead

NOAA

Up to 16 days (384 step) forecast available

ECMWF

Up to 15 days (360 step) forecast available

## 5. Metadata Index — STEP 8: Select API Request Method

The screenshot shows a web browser window with a URL: `weather-api.bmap.kr/inventory?path=/noaa/gfs/2026/2026-04/2026-04-03/06Z/original/DIRPW/`. The page title is "Optimal-LOADS • Consortium Preview". Below the title are buttons for "Manual" and "API Documentation". The main content is a "Directory Browser" showing a list of files in a table. The table has columns for "NAME", "LAST\_MODIFIED", and "SIZE". The files listed are all "original\_DIRPW\_20260403\_06Z\_step000.grib2" through "original\_DIRPW\_20260403\_06Z\_step036.grib2". Each row has a dropdown menu with "Center+Buffer" selected, and buttons for "copy", "open in the new tab", and "File URL". A red dashed arrow points from the "File URL" option in the dropdown menu of the row for "original\_DIRPW\_20260403\_06Z\_step027.grib2" to the "File URL" button in the row for "original\_DIRPW\_20260403\_06Z\_step036.grib2".

Hover over a step to show the select button

This feature was created to quickly test API requests, since combining variables, run times, and steps can be complex — api use it to preview and test API requests quickly

Three api (shown in the select box):

**Center + Buffer**

Request data by specifying a center coordinate and buffer range  
Use this to get grid data around a given center point

**NW/SE Corners**

Specify a rectangular area using  
NW and SE corner coordinates

**File URL**

Provides a direct download URL for the original grib file  
from S3 storage  
Open the URL in a new tab to download the file immediately

**copy**

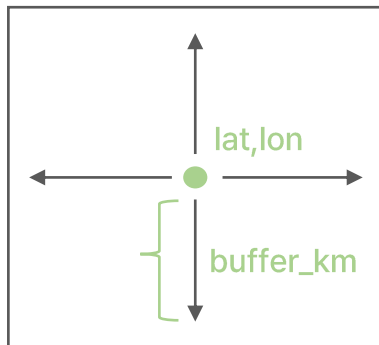
api Copy the API request URL

**Open in the new tab**

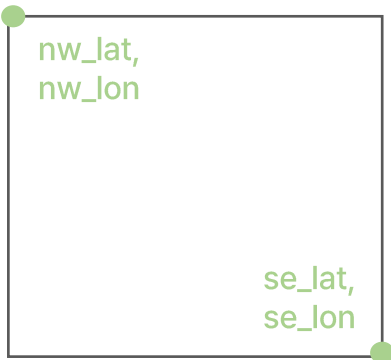
api Open the API request in a new tab

## 5. Metadata Index — STEP 8: Select API Request Method

Center + Buffer



NW/SE Corners



```
Weather API Inventory Browser x weather-api.bmap.kr/api/griddata: x +
weather-api.bmap.kr/api/griddata?source=noaa&dataset_code=original&model=gfs&variable=DIRP...
Pretty-print 175%
{
  "timestamp": "2026-04-04T09:00:00Z",
  "variable": "DIRPW",
  "unit": "degree",
  "name_en": "Peak Wave Direction",
  "standard_name": null,
  "bbox": [128.5, 34.75, 129.5, 35.25],
  "resolution": [0.25, 0.25],
  "shape": [5, 3],
  "indexOrder": "row-major-bottom-up",
  "valueEncoding": {
    "type": "float32",
    "scale": 1,
    "offset": 0,
    "noData": null
  },
  "data": [268.980010986328, 186.720001220703, 198.070007324219, 205.610000610352,
158.619995117188, null, 230.110000610352, 179.25, 190.9600006713867, 157.419998168945,
null, null, null, 142.830001831055, 155.690002441406]
}
```

Both methods return the same data —, they only differ in how you specify the spatial area

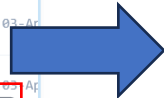
## 5. Metadata Index — STEP 8: Select API Request Method

original_DIRPW_20260403_06Z_step006.grib2	03-Ap
original_DIRPW_20260403_06Z_step009.grib2	03-Ap
original_DIRPW_20260403_06Z_step012.grib2	03-Ap
original_DIRPW_20260403_06Z_step015.grib2	03-Ap
original_DIRPW_20260403_06Z_step018.grib2	03-Ap
original_DIRPW_20260403_06Z_step021.grib2	03-Ap
original_DIRPW_20260403_06Z_step024.grib2	03-Ap
original_DIRPW_20260403_06Z_step027.grib2	03-Ap
original_DIRPW_20260403_06Z_step030.grib2	03-Ap

**File URL**

File URL

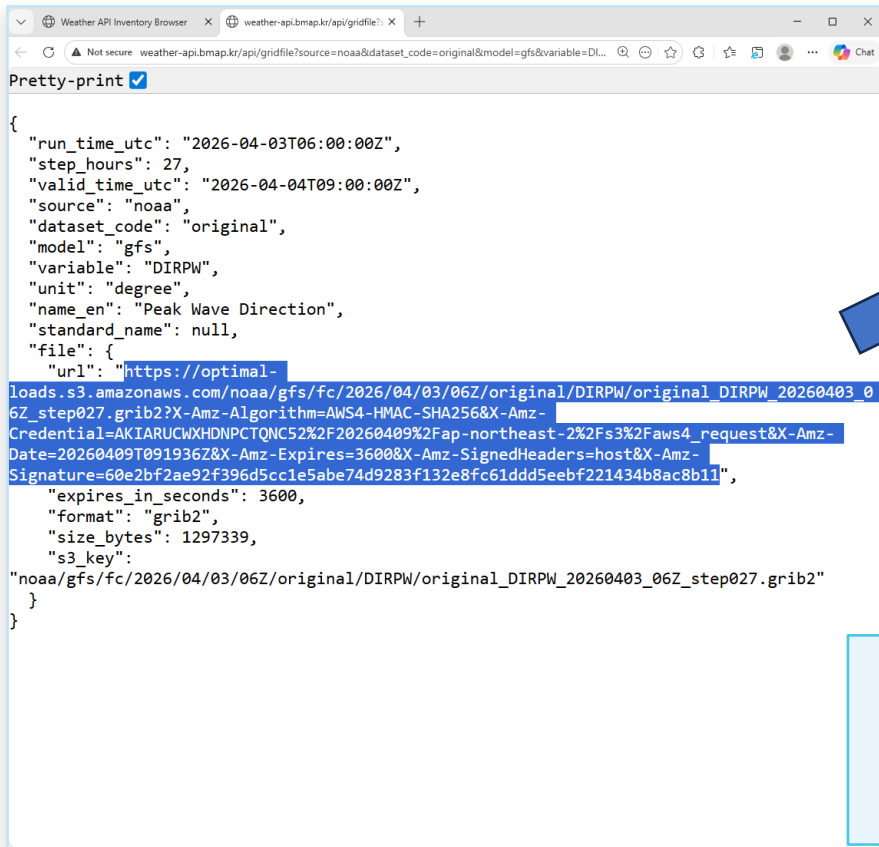
open in the new tab



```
weather-api.bmap.kr/api/gridfile?source=noaa&dataset_code=original&model=gfs&variable=DI...
Pretty-print ✓
{
  "run_time_utc": "2026-04-03T06:00:00Z",
  "step_hours": 27,
  "valid_time_utc": "2026-04-04T09:00:00Z",
  "source": "noaa",
  "dataset_code": "original",
  "model": "gfs",
  "variable": "DIRPW",
  "unit": "degree",
  "name_en": "Peak Wave Direction",
  "standard_name": null,
  "file": {
    "url": "https://optimal-loads.s3.amazonaws.com/noaa/gfs/fc/2026/04/03/06Z/original/DIRPW/original_DIRPW_20260403_06Z_step027.grib2?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIARUCWXHNDPCTQNC52%2F20260409%2Fap-northeast-2%2Fs3%2Faws4_request&X-Amz-Date=20260409T091936Z&X-Amz-Expires=3600&X-Amz-SignedHeaders=host&X-Amz-Signature=60e2bf2ae92f396d5cc1e5abe74d9283f132e8fc61ddd5eebf221434b8ac8b11",
    "expires_in_seconds": 3600,
    "format": "grib2",
    "size_bytes": 1297339,
    "s3_key": "noaa/gfs/fc/2026/04/03/06Z/original/DIRPW/original_DIRPW_20260403_06Z_step027.grib2"
  }
}
```

file URL provides a direct download link for the original S3 ((data storage)) from S3 grib file  
url Copy the URL from the response and URLOpen it in a new tab to download immediately

## 5. Metadata Index — STEP 8: Select API Request Method



```
Pretty-print ✓  
{  
  "run_time_utc": "2026-04-03T06:00:00Z",  
  "step_hours": 27,  
  "valid_time_utc": "2026-04-04T09:00:00Z",  
  "source": "noaa",  
  "dataset_code": "original",  
  "model": "gfs",  
  "variable": "DIRPW",  
  "unit": "degree",  
  "name_en": "Peak Wave Direction",  
  "standard_name": null,  
  "file": {  
    "url": "https://optimal-loads.s3.amazonaws.com/noaa/gfs/fc/2026/04/03/06Z/original/DIRPW/original_DIRPW_20260403_06Z_step027.grib2?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIARUCWXHDNPCTQNC52%2F20260409%2Fap-northeast-2%2Fs3%2Faws4_request&X-Amz-Date=20260409T091936Z&X-Amz-Expires=3600&X-Amz-SignedHeaders=host&X-Amz-Signature=60e2bf2ae92f396d5cc1e5abe74d9283f132e8fc61ddd5eebf221434b8ac8b11",  
    "expires_in_seconds": 3600,  
    "format": "grib2",  
    "size_bytes": 1297339,  
    "s3_key":  
    "noaa/gfs/fc/2026/04/03/06Z/original/DIRPW/original_DIRPW_20260403_06Z_step027.grib2"  
  }  
}
```



```
Pretty-print ✓  
{  
  "run_time_utc": "2026-04-03T06:00:00Z",  
  "step_hours": 27,  
  "valid_time_utc": "2026-04-04T09:00:00Z",  
  "source": "noaa",  
  "dataset_code": "original",  
  "model": "gfs",  
  "variable": "DIRPW",  
  "unit": "degree",  
  "name_en": "Peak Wave Direction",  
  "standard_name": null,  
  "file": {  
    "url": "https://optimal-loads.s3.amazonaws.com/noaa/gfs/fc/2026/04/03/06Z/original/DIRPW/original_DIRPW_20260403_06Z_step027.grib2?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIARUCWXHDNPCTQNC52%2F20260409%2Fap-northeast-2%2Fs3%2Faws4_request&X-Amz-Date=20260409T091936Z&X-Amz-Expires=3600&X-Amz-SignedHeaders=host&X-Amz-Signature=60e2bf2ae92f396d5cc1e5abe74d9283f132e8fc61ddd5eebf221434b8ac8b11",  
    "expires_in_seconds": 3600,  
    "format": "grib2",  
    "size_bytes": 1297339,  
    "s3_key":  
    "noaa/gfs/fc/2026/04/03/06Z/original/DIRPW/original_DIRPW_20260403_06Z_step027.grib2"  
  }  
}
```

file URL provides a direct download link for the original S3 ((data storage)) from S3 grib2 file  
url Copy the URL from the response and URL Open it in a new tab to download immediately

# 06

## API Parameter Combinations

*API How to Make API Requests*

## 6. API Parameter Combinations — path List & Required Parameters

<http://weather-api.bmap.kr/> Available paths after path

Method	endpoint	Required Parameters	Purpose
GET	/api/sources	None	List of available data sources
GET	/api/variables	None	List of available variables per source
GET	/api/gridfile	source, model, variable, dataset_code run_time_utc, step_hours, Spatial Parameters (center + buffer) lat, lon, buffer_km (corner) nw_lon, nw_lat, se_lon, se_lat	Returns a single file download URL
GET	/api/griddata	source, model, variable, dataset_code run_time_utc, step_hours	Returns grid data JSON

## 6. Variable Combinations by Parameter (griddata, gridfile)

	step ①		step ②	step ③	step ④		step ⑤
Model	source	model	dataset_code	variable	run_time_utc	step_hours	Spatial Parameters
ECMWF IFS	ecmwf	ifs	original	10u 10v swh mwd mwp	<Date>T<Time>Z format required *Date format: : yyyy-mm-dd **Time format: : HH:00:00 (only 00/06/12/18 allowed)	<ul style="list-style-type: none"> <li>0Z, 12Z : 0 ~ 360 (3hour interval)</li> <li>6Z, 18Z : 0 ~ 144 (6hour interval)</li> </ul>	<b>(center + buffer)</b> lat, lon, buffer_km
			computed	wind_dir_10m wind_speed_10m			
NOAA GFS	noaa	gfs	original	WDIR WIND HTSGW DIRPW PERPW UGRD VGRD		0 ~ 384 (3hour interval)	<b>(corner)</b> nw_lon, nw_lat, se_lon, se_lat

## 6. API Parameter Examples

### (griddata) Center + Buffer Style

`http://weather-api.bmap.kr/api/griddata` endpoint

`?source=ecmwf  
&model=ifs`

Choose **model**

Request URL  
Example

`&variable=mwd  
&dataset_code=original`

Choose **variables**

`&run_time_utc=2026-02-02T12:00:00Z  
&step_hours=141`

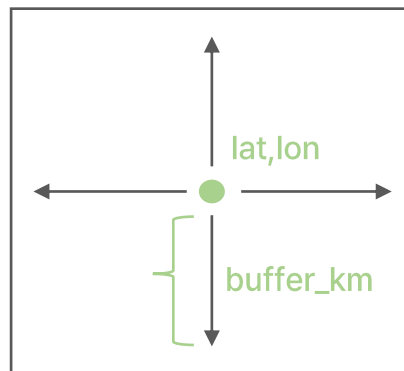
Choose **time**

Parameter  
Meaning

`&lat=35.0  
&lon=129.0  
&buffer_km=50.0`

Enter spatial parameters  
center information and buffer

[http://weather-api.bmap.kr/api/griddata?source=ecmwf&model=ifs&variable=mwd&dataset\\_code=original&run\\_time\\_utc=2026-02-02T12:00:00Z&step\\_hours=141&lat=35.0&lon=129.0&buffer\\_km=50.0](http://weather-api.bmap.kr/api/griddata?source=ecmwf&model=ifs&variable=mwd&dataset_code=original&run_time_utc=2026-02-02T12:00:00Z&step_hours=141&lat=35.0&lon=129.0&buffer_km=50.0)



## 6. API Parameter Examples

### (griddata) NW/SE Corners Style

`http://weather-api.bmap.kr/api/griddata` endpoint

`?source=noaa  
&model=gfs`

Choose **model**

`&variable=DIRPW  
&dataset_code=original`

Choose **variables**

`&run_time_utc=2025-07-01T00:00:00Z  
&step_hours=0`

Choose **time**

`&nw_lon=128.450102  
&nw_lat=35.45045  
&se_lon=129.549898  
&se_lat=34.54955`

Enter spatial parameters  
the north west information and  
South east information

Request URL  
Example

[http://weather-api.bmap.kr/api/griddata?source=noaa&dataset\\_code=original&model=gfs&variable=DIRPW&run\\_time\\_utc=2025-07-01T00:00:00Z&step\\_hours=0&nw\\_lon=128.450102&nw\\_lat=35.45045&se\\_lon=129.549898&se\\_lat=34.54955](http://weather-api.bmap.kr/api/griddata?source=noaa&dataset_code=original&model=gfs&variable=DIRPW&run_time_utc=2025-07-01T00:00:00Z&step_hours=0&nw_lon=128.450102&nw_lat=35.45045&se_lon=129.549898&se_lat=34.54955)

Parameter  
Meaning

nw\_lat,  
nw\_lon

se\_lat,  
se\_lon

# 6. API Parameter Examples

## Grid File

<http://weather-api.bmap.kr/api/gridfile> endpoint

**?source=noaa  
&model=gfs**

Choose **model**

**&variable=DIRPW  
&dataset\_code=original**

Choose **variables**

**&run\_time\_utc=2025-07-01T00:00:00Z  
&step\_hours=0**

Choose **time**

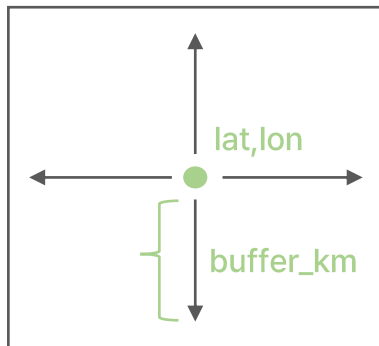
The gridfile endpoint does not require spatial parameters

Request URL Example [http://weather-api.bmap.kr/api/gridfile?source=noaa&dataset\\_code=original&model=gfs&variable=DIRPW&run\\_time\\_utc=2025-07-01T00:00:00Z&step\\_hours=0](http://weather-api.bmap.kr/api/gridfile?source=noaa&dataset_code=original&model=gfs&variable=DIRPW&run_time_utc=2025-07-01T00:00:00Z&step_hours=0)

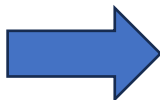
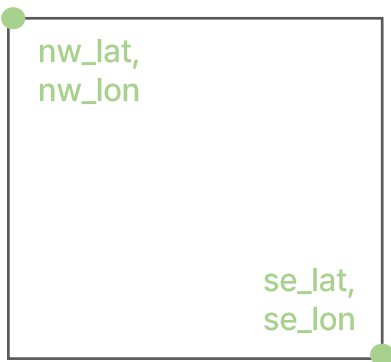
```
{
  "run_time_utc": "2026-04-03T06:00:00Z",
  "step_hours": 27,
  "valid_time_utc": "2026-04-04T09:00:00Z",
  "source": "noaa",
  "dataset_code": "original",
  "model": "gfs",
  "variable": "DIRPW",
  "unit": "degree",
  "name_en": "Peak Wave Direction",
  "standard_name": null,
  "file": {
    "url": "https://optimal-loads.s3.amazonaws.com/noaa/gfs/fc/2026/04/03/06Z/original/DIRPW/original_DIRPW_20260403_06Z_step027.grib2?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIARUCWXHDNPCTQNC52%2F20260409%2Fap-northeast-2%2Fs3%2Faws4_request&X-Amz-Date=20260409T091936Z&X-Amz-Expires=3600&X-Amz-SignedHeaders=host&X-Amz-Signature=60e2bf2ae92f396d5cc1e5abe74d9283f132e8fc61ddd5eebf221434b8ac8b11",
    "expires_in_seconds": 3600,
    "format": "grib2",
    "size_bytes": 1297339,
    "s3_key": "noaa/gfs/fc/2026/04/03/06Z/original/DIRPW/original_DIRPW_20260403_06Z_step027.grib2"
  }
}
```

## 6. API Parameter Examples

Center + Buffer



NW/SE Corners



A screenshot of a web browser displaying a JSON API response. The browser's address bar shows the URL: `weather-api.bmap.kr/api/griddata?source=noaa&dataset_code=original&model=gfs&variable=DIRP...`. The response is displayed in a "Pretty-print" view. The JSON data includes a timestamp, variable name, unit, name, standard name, bounding box, resolution, shape, index order, value encoding, and a list of data points.

```
{
  "timestamp": "2026-04-04T09:00:00Z",
  "variable": "DIRPW",
  "unit": "degree",
  "name_en": "Peak Wave Direction",
  "standard_name": null,
  "bbox": [128.5, 34.75, 129.5, 35.25],
  "resolution": [0.25, 0.25],
  "shape": [5, 3],
  "indexOrder": "row-major-bottom-up",
  "valueEncoding": {
    "type": "float32",
    "scale": 1,
    "offset": 0,
    "noData": null
  },
  "data": [268.980010986328, 186.720001220703, 198.070007324219, 205.610000610352,
    158.619995117188, null, 230.110000610352, 179.25, 190.9600006713867, 157.419998168945,
    null, null, null, 142.830001831055, 155.690002441406]
}
```

Both methods return the same data —, they only differ in how you specify the spatial area

## 6. API Parameter Examples

### Important Notes & Cell Count Limit

#### ⚠ **griddata** When making a request:

1. style Center + Buffer Style and NW/SE Corners Style cannot be **cannot be used at the same time**

Using both together returns a 422 error

2. If estimated cell count **5,250,000** exceeded — 413 error

Reduce the bbox range or shrink the buffer

#### ⚠ **gridfile** When making a request:

3. **ECMWF** Model's **wind\_speed\_10m**, **wind\_dir\_10m** not supported

Computed from original files and returned JSONas JSON only

07

# How to Read API Responses

*API How to Read API Responses*

# 7. JSON How to Read API Responses — Array Storage Structure

## Storage Rules & Array Example

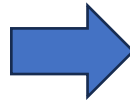
### JSON 's means 1-dimensional array

Index Order : “row-major bottom-up”

Data array starts from the bottom-left ((southwest)) and fills horizontally (west to east) row by row

*// Response Example*

```
{  
  ... metadata,  
  "data" : [0, 1, 2, 3, 4, 5, 6, 7, 8, 9,  
            10, 11, 12, 13, 14]  
}
```



*// In lat/lon grid coordinates:*

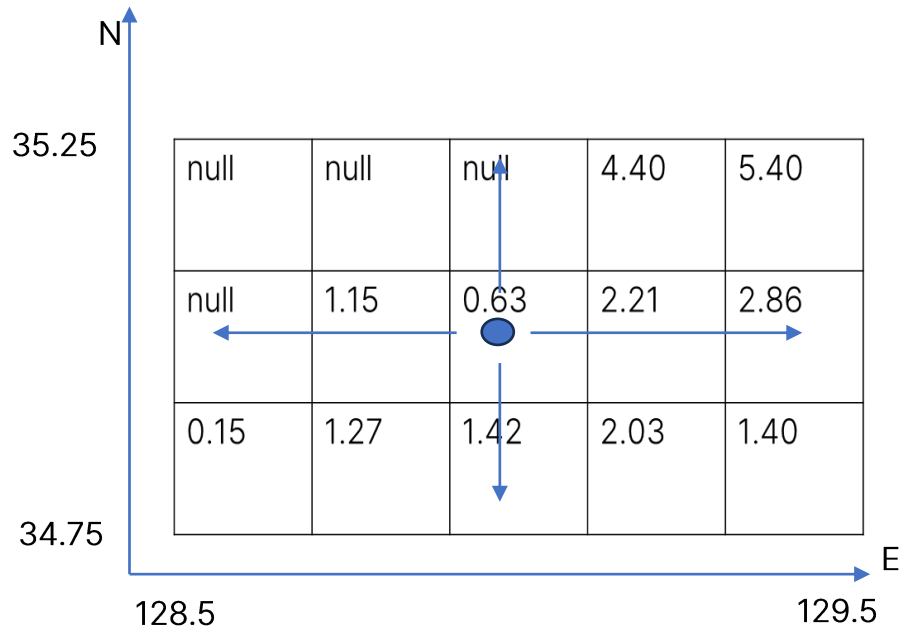
10	11	12	13	14
5	6	7	8	9
0	1	2	3	4

# 7. JSON How to Read API Responses — Array Storage Structure

## Storage Rules & Array Example

```
{  
  "timestamp": "2025-07-01T00:00:00Z",  
  "variable": "VGRD",  
  "unit": "m/s",  
  "name_en": "Northward Current",  
  "standard_name": null,  
  "bbox": [128.5, 34.75, 129.5, 35.25],  
  "resolution": [0.25, 0.25],  
  "shape": [5, 3],  
  "indexOrder": "row-major-bottom-up",  
  "valueEncoding": {  
    "type": "float32",  
    "scale": 1,  
    "offset": 0,  
    "nodata": null  
  },  
  "data": [0.150000005960464, 1.26999998092651, 1.41999995708466,  
2.02999997138977, 1.39999997615814, null, 1.14999997615814,  
0.629999995231628, 2.21000003814697, 2.85999989509583, null, null,  
null, 4.40000009536743, 5.40000009536743]  
}
```

**example**



# BLUEMAP

## Marine Weather Data API

*<http://weather-api.bmap.kr/>*

BlueMap Inc. | Optimal-LOADS ITEA4

### Contact

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For partner-only inquiries (expanding data scope, standards compliance.. etc), please contact us by email.