European Ground Motion Service: GNSS model 2015-2023 (vector), Europe, 2-yearly, May. 2023

The European Ground Motion Service (EGMS) is a component of the Copernicus Land Monitoring Service. EGMS provides consistent, regular, standardised, harmonised and reliable information regarding natural and anthropogenic ground motion phenomena over the Copernicus Participating States and across national borders, with millimetre accuracy.

This set of metadata describes the global navigation satellite system (GNSS) model used to calibrate the EGMS Calibrated product (https://sdi.eea.europa.eu/catalogue/srv/eng/catalog. search#/metadata/d92e61be-d6e8-4bc1-aa10-f742bf27bab9). This layer is produced based on GNSS data from various sources, with the EUREF Densification network as the main entry point. After filtering and quality control, a total of 3770 stations are used to generate the GNSS model which contains average velocities in east, north and up directions displayed on a 50-km grid. The grid dimension is determined by the average distance between well-maintained GNSS stations over continental Europe.

The GNSS model is distributed to users in a single comma-separated values file. Each cell of the model is associated to a value of vertical and horizontal velocity. The product covers the Copernicus Participating States (except for DROMs) and United Kingdom.

Simple

Date (Creation)	2023-01-01
Date (Publication)	2023-05-15
Edition	01.00
Citation identifier	copernicus_v_3035_50_km_egms-gnss-model_p_2015-2023_v01_r00
Code	10.2909/8780c353-e01e-4b51-bbb3-e1e01a597033

Point of contact	Organisation name	Individual name	Electronic mail address	Website	Role
	European Environment Agency		copernicus@eea.europa.eu	https://land.copernicus.eu	Distributor
	European Environment Agency		copernicus@eea.europa.eu	https://land.copernicus.eu	Custodian
	European Environment Agency		copernicus@eea.europa.eu	https://land.copernicus.eu	Point of contact

Point of contact

No information provided.

Point of contact

No information provided.

Maintenance and update frequency	Annually
GEMET - INSPIRE themes, version 1.0	• Natural risk zones
Keywords	
Continents, countries, sea regions of the world.	• EEA38 (from 2020) • United Kingdom
Keywords	
GEMET	• geodesy • earth observation

	- model
	- geo-referenced information
	- calibration
Spatial scope	- [European](#)
Temporal resolution	- Not planned
EEA Management Plan	- 2023 6.5.32
Access constraints	Other restrictions
Other constraints	[no limitations to public access](#)
Use constraints	Other restrictions
Other constraints	The Copernicus programme is governed by Regulation (EU) No 2021/696 of the European Parliament and of the Council of 28 April 2021 establishing the Union Space Programme and the European Union Agency for the Space Programme and repealing Regulations (EU) No 912/2010, (EU) No 1285/2013 and (EU) No 377/2014 and Decision No 541/2014/EU. Within the Copernicus programme, a portfolio of land monitoring activities has been delegated by the European Union to the EEA. The land monitoring products and services are made available through the Copernicus land portal on a principle of full, open and free access, as established by the Copernicus data and information policy Regulation (EU) No 1159/2013 of 12 July 2013. The Copernicus data and information policy is in line with the EEA policy of open and easy access to the data, information and applications derived from the activities described in its management plan. Free, full and open access to this data set is made on the conditions that: 1. When distributing or communicating Copernicus dedicated data and Copernicus service information to the public, users shall inform the public of the source of that data and information. 2. Users shall make sure not to convey the impression to the public that the user's activities are officially endorsed by the Union. 3. Where that data or information has been adapted or modified, the user shall clearly state this. 4. The data remain the sole property of the European Union. Any information and data produced in the framework of the action shall be the sole property of the European Union. Any communication and publication by the beneficiary shall acknowledge that the data were produced "with funding by the European Union".
Aggregate Datasetindentifier	d92e61be-d6e8-4bc1-aa10-f742bf27bab9
Association Type	Cross reference
Spatial representation type	Vector
Distance	50 50 km
Language of dataset	English
Character set	UTF8
Topic category	- Geoscientific information

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Begin date	2015-02-01
End date	2023-01-01
Coordinate reference system identifier	EPSG:3035
Distribution format	• ascii (.csv, .txt, .sql) ( )

OnLine resource	Protocol	Linkage	Name
	WWW:URL	https://land.copernicus.eu/en/technical-library/gnss-calibration-data/@@download/file	Direct download
	WWW:LINK-1.0-http--link	https://land.copernicus.eu/en/products/european-ground-motion-service	Service documentation
	WWW:LINK-1.0-http--link	https://epnd.sgo-penc.hu/	More information on the EUREF Densification working group

OnLine resource

No information provided.

OnLine resource	Protocol	Linkage	Name
	DOI	https://doi.org/10.2909/8780c353-e01e-4b51-bbb3-e1e01a597033	
Hierarchy level	Dataset		

Conformance result

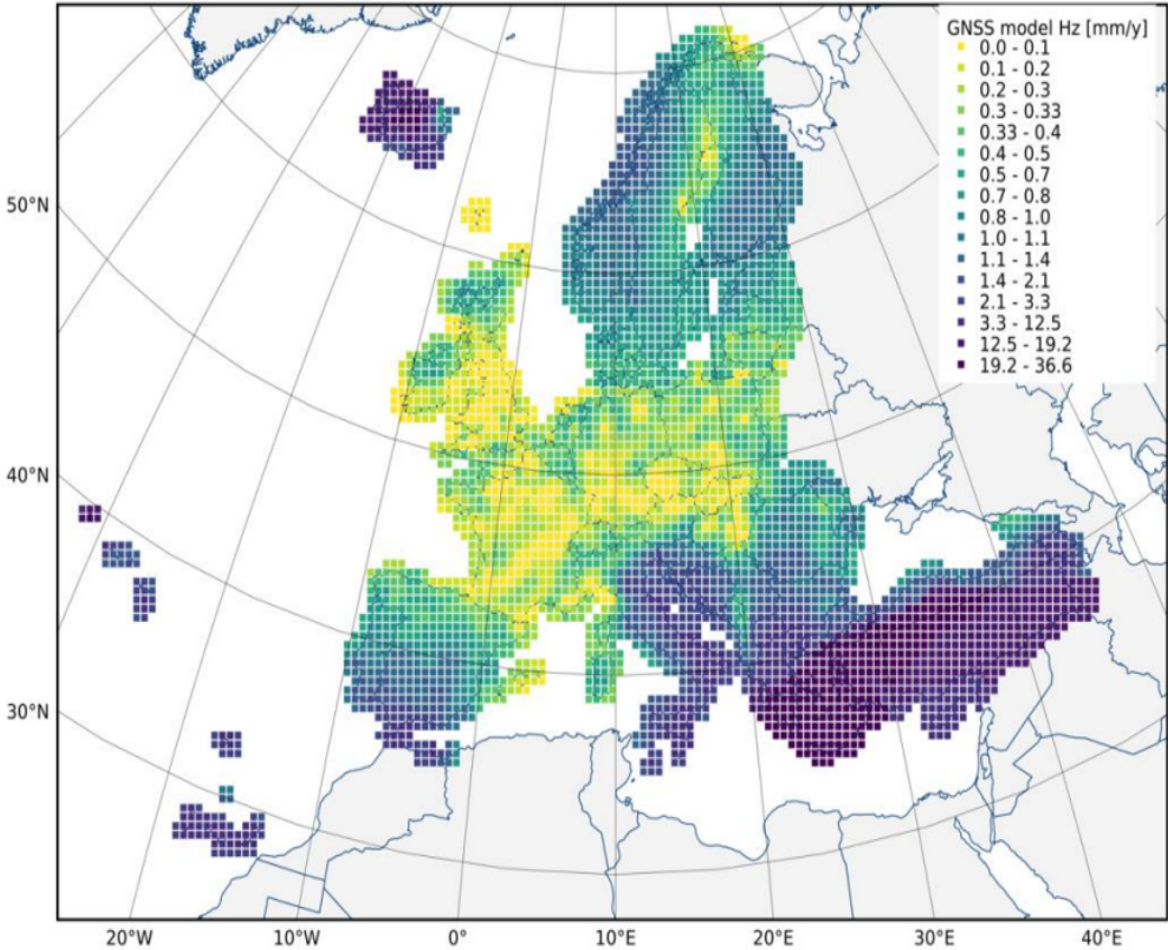| Date (Publication)	2010-12-08
Explanation	See the referenced specification

Statement	The GNSS model is obtained from the analysis of 3770 GNSS stations mainly part of the EUREF Densification network. The stations were selected based on the following criteria:
	i) minimum length of time series >3 years,
	ii) stations should not record time series with artificial artifacts and
	iii) stations should not record strong non-linear motion except for seasonality.

The GNSS model is then derived following the least-squares collocation concept. The principle behind this approach is to use the correlations of GNSS station velocities to predict new values at any new point within the covered area, together with associated uncertainties.

Metadata

File identifier	8780c353-e01e-4b51-bbb3-e1e01a597033 XML
Metadata language	English
Character set	UTF8
Hierarchy level	Dataset
Date stamp	2024-03-22T14:14:31.025974Z
Metadata standard name	ISO 19115/19139
Metadata standard version	1.0

Metadata author	Organisation name	Individual name	Electronic mail address	Website Role
	European Environment Agency		sdi@eea. europa.eu	Point of contact

Overviews