DATA SET DESCRIPTION

Daily mean of pollen concentration for Germany based on the dispersion model ICON-ART

Cite data set as: DWD, daily mean of pollen concentration based on ICON-ART, last accessed: < date >.

INTENT OF THE DATA SET

The pollen forecasts show the expected pollen concentration in Germany within the pollen season.

POINT OF CONTACT

Deutscher Wetterdienst
Zentrum für Medizin-Meteorologische Forschung Freiburg (ZMMF)
Stefan-Meier-Str. 4
79104 Freiburg
Tel.: +49 (0)69 8062-9630
Fax: +49 (0)69 8062-9622
E-Mail: mm.freiburg@dwd.de

DATA DESCRIPTION

Parameter	pollen concentration (1/m^3)
Spatial coverage	Germany (47.2°-56.2°, 5.6°-15.1°)
Spatial resolution	~ 6.5 km x 6.5 km (R3B08)
Temporal coverage	forecast day to +5 days
Temporal resolution	daily
Format	NetCDF, details see FORMATBESCHREIBUNG

DATA ORIGIN

Once a day (~3:35 UTC) the German Meteorological Service is running a + 150h forecast of pollen concentration for Europa based on ICON-ART. The forecast for Germany (latitude:

47.2° - 56.2° and longitude: 5.6° - 15.1°) is provided in form of daily mean pollen concentrations on opendata.dwd.de. The forecasts are available exclusively during the respective pollen season.

Following pollen species are currently available:

Name	Latin name *	Saison [day of year]	Start and end of the season
Hazel	**Cory**lus	1 – 146	Jan, 1 – May, 26
Alder	**Alnu**s	1 – 146	Jan, 1 – May, 26
Birch	**Betu**la	30 – 161	Jan, 30 – June, 10
Grasses	**Poac**eae	60 – 305	Mar, 1 – Nov, 1
Ragweed	**Amb**rosia	213 – 280	Aug, 1 – Oct, 7

* The names highlighted in bold are used as variable names in the NetCDF format.

The corresponding meteorology can be used by ICON-EU (00 UTC model run):
https://opendata.dwd.de/weather/nwp/icon-eu/grib/00/

CONSIDERATIONS FOR APPLICATIONS

When using these forecasts, it should be noted that they are the subject of intensive research and further development. The predictions are not suitable for clinical studies.

FORMAT DESCRIPTION

Data are available on a regular lat/lon grid in NetCDF format.
Header of NetCDF:

```
dimensions:
        time = UNLIMITED ; // (6 currently)
        bnds = 2 ;
        longitude = 153 ;
        latitude = 145 ;
variables:
        int time(time) ;
                time:standard_name = "time" ;
                time:long_name = "time" ;
                time:bounds = "time_bnds" ;
                time:units = "hours since 1900-01-01 00:00:00.0" ;
                time:calendar = "gregorian" ;
                time:axis = "T" ;
        double time_bnds(time, bnds) ;
        float longitude(longitude) ;
                longitude:standard_name = "longitude" ;
                longitude:long_name = "longitude" ;
                longitude:units = "degrees_east" ;
                longitude:axis = "X" ;
        float latitude(latitude) ;
                latitude:standard_name = "latitude" ;
                latitude:long_name = "latitude" ;
                latitude:units = "degrees_north" ;
                latitude:axis = "Y" ;
        float POAC(time, latitude, longitude) ;
                POAC:_FillValue = -32767.f ;
                POAC:missing_value = -32767.f ;
                POAC:cell_methods = "time: mean" ;
```

```
                POAC:units = "1/m^3" ;

// global attributes:
                :CDI = "Climate Data Interface version 1.9.10 (https://mpimet.mpg.de/cdi)"
;
                :Conventions = "CF-1.6" ;
                :frequency = "day" ;
                :standard_name = "POAC_concentration" ;
                :CDO = "Climate Data Operators version 1.9.10 (https://mpimet.mpg.de/cdo)"
;
```

REFERENCES

Vogel, H., Pauling, A., Vogel, B.: Numerical simulation of birch pollen dispersion with an operational weather forecast system. Int. J. Biometeorol., 52, 805-14, https://doi.org/10.1007/s00484-008-0174-3, 2008

Zink, K., Pauling, A., Rotach, M.W., Vogel, H., Kaufmann, P., Clot, B.: EMPOL 1.0: a new parameterization of pollen emission in numerical weather prediction models. Geosci. Model Dev., 6, 1961-1975, https://doi.org/10.5194/gmd-6-1961-2013, 2013

Rieger, D., Bangert, M., Bischoff-Gauss, I., Förstner, J., Lundgren, K., Reinert, D., Schröter, J., Vogel, H., Zängl, G., Ruhnke, R., and Vogel, B.: ICON–ART 1.0 –a new online-coupled model system from the global to regional scale, Geosci. Model Dev., 8, 1659–1676, https://doi.org/10.5194/gmd-8-1659-2015, 2015

COPYRIGHT

REVISION HISTORY

This document is maintained by DWD Center for Human Biometeorological Research; last edited January 5, 2024.