

DATA SET DESCRIPTION

Content of data set: WRF (Weather Research and Forecasting) model forecasts. The numerical model runs four times a day within the framework of the nowcasting project of the Hungarian Meteorological Service.

Name of data set files:

2-dimensional fields:

WRF-<variable>-<YYYYMMDD>_<HHmm>+<TTTtt>.nc.zip, where

- <variable>: meteorological variable,
- <YYYYMMDD>: date of the forecast run,
- <HHmm>: initial time of the forecast in UTC,
- <TTTtt>: forecast lead time in hour (TTT) and minute (tt)

For 3-dimensional fields on pressure levels:

WRF-<variable>_p<pressure_level>-<YYYYMMDD>_<HHmm>+<TTTtt>.nc.zip, where

- <variable>: meteorological variable,
- <pressure_level>: pressure level in hPa,
- <YYYYMMDD>: date of the forecast run,
- <HHmm>: initial time of the forecast in UTC,
- <TTTtt>: forecast lead time in hour (TTT) and minutes (tt)

For 3-dimensional fields on height levels:

WRF-<variable>_h<height_level>-<YYYYMMDD>_<HHmm>+<TTTtt>.nc.zip, where

- <variable>: meteorological variable,
- <height_level>: pressure level in meter,
- <YYYYMMDD>: date of the forecast run,
- <HHmm>: initial time of the forecast in UTC,
- <TTTtt>: forecast lead time in hour (TTT) and minutes (tt)

DATA SET CHARACTERISTICS

Spatial coverage:

- number of grid points in the west-east direction: 499
- number of grid points in the north-south direction: 394
- coordinates of the northwest point of the grid: lat=49.93735°; lon=13.93832°
- grid spacing in the east-west direction: dx=0.021236 °
- grid spacing in the north-south direction: dy=0.01428 °



Temporal coverage: 0 – 36 hours

Spatial resolution: 1.5 km

Temporal resolution: 1 hourly

Projection: spherical

Format(s): netcdf compressed into zip file

Parameter(s):

Parameter	Description	Unit
T2	2m temperature	Kelvin
U10	west-east component of the average wind at the height of 10 m	m/s
V10	south-north component of the average wind at the height of 10 m	m/s
maxLogz	derived maximum radar reflectivity	dBz
PSEALVLC	mean sea level pressure	Pascal
CLOUD_BASE	height of cloud base	m
CLOUD_HIGH	high cloud cover	octa
CLOUD_MID	middle cloud cover	octa
CLOUD_LOW	low cloud cover	octa
CLOUD_TOTAL	total cloud cover	octa
RAIN_TOT	accumulated total grid scale precipitation	mm
WGUST	Wind gust	m/s
SWDOWN	Downward short wave flux at ground surface	W/m ²
PBLH	Planetary boundary layer height	m
SNOWH	Surface snow height	m
3-dimensional fields on pressure levels		
levels: 1000 hPa, 850 hPa, 700 hPa, 500 hPa		
T	temperature on pressure level	Kelvin
u	eastward wind on pressure level	m/s
v	northward wind on pressure level	m/s
RelHum	relative humidity on pressure level	%
Geopot	geopotential height on pressure level	m
3-dimensional fields on elevation levels above ground		
levels: 100 m		
T_pbl	temperature in the planetary boundary layer	Kelvin

**Uncertainties:**

Uncertainty in numerical models.

CONSIDERATIONS/SUGGESTIONS FOR APPLICATIONS

Short-term forecast of meteorological fields.

ADDITIONAL INFORMATION

<https://www.met.hu/idojaras/elorejelzes/modellek/WRF/>

<https://www.mmm.ucar.edu/weather-research-and-forecasting-model>

REVISION HISTORY

The WRF system is updated once a year.

CONTACT POINT

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