

Dr. Ralf Schmitz
Deutscher Wetterdienst

Road Weather Information System (RWIS) *in Germany*



- Introduction
- Plausibility Checks
- Backend RWIS
- Frontend RWIS

DWD and land transport



wikipedia.org



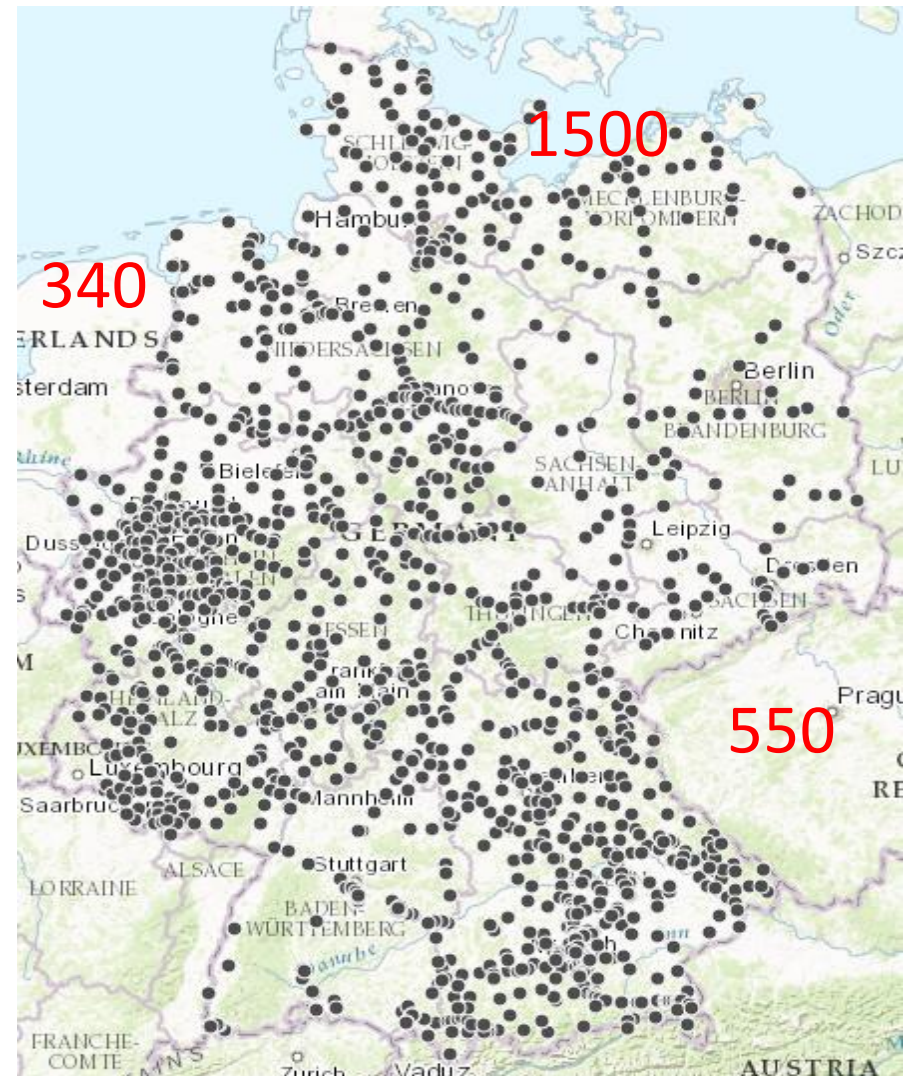
wiwo.de

- Data Collecting
- Plausibility Checks
- Road Forecasts
- RWIS

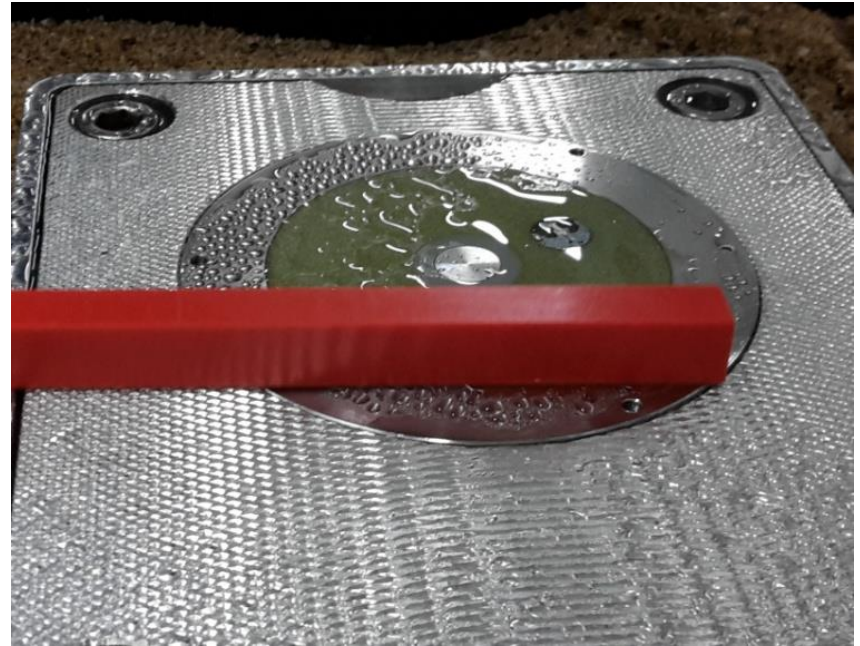
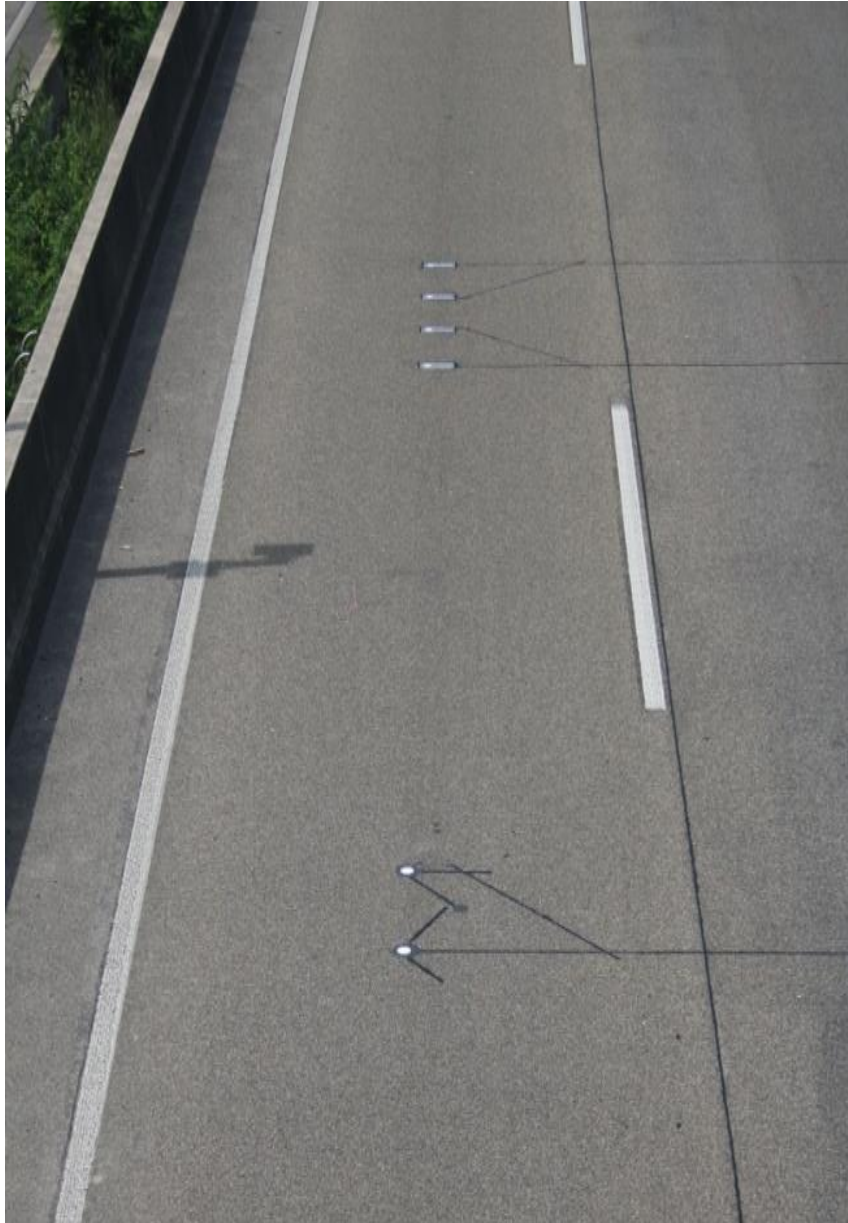
- Warnings
- Data Account

RWIS Overview

- 1500 stations
- 15min resolution
- Road Surf. Temp
/ Air.-/Dew. Temp.
- 2500 Customers

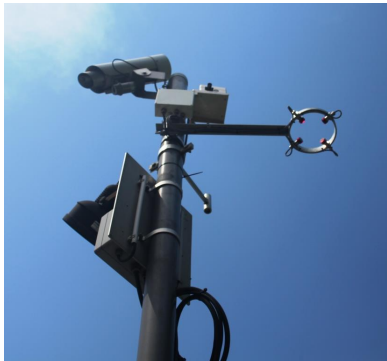


Street weather station (SWS) in Germany



Quelle: Badelt, BAST

Full automatic quality control Street Weather Stations (SWS)

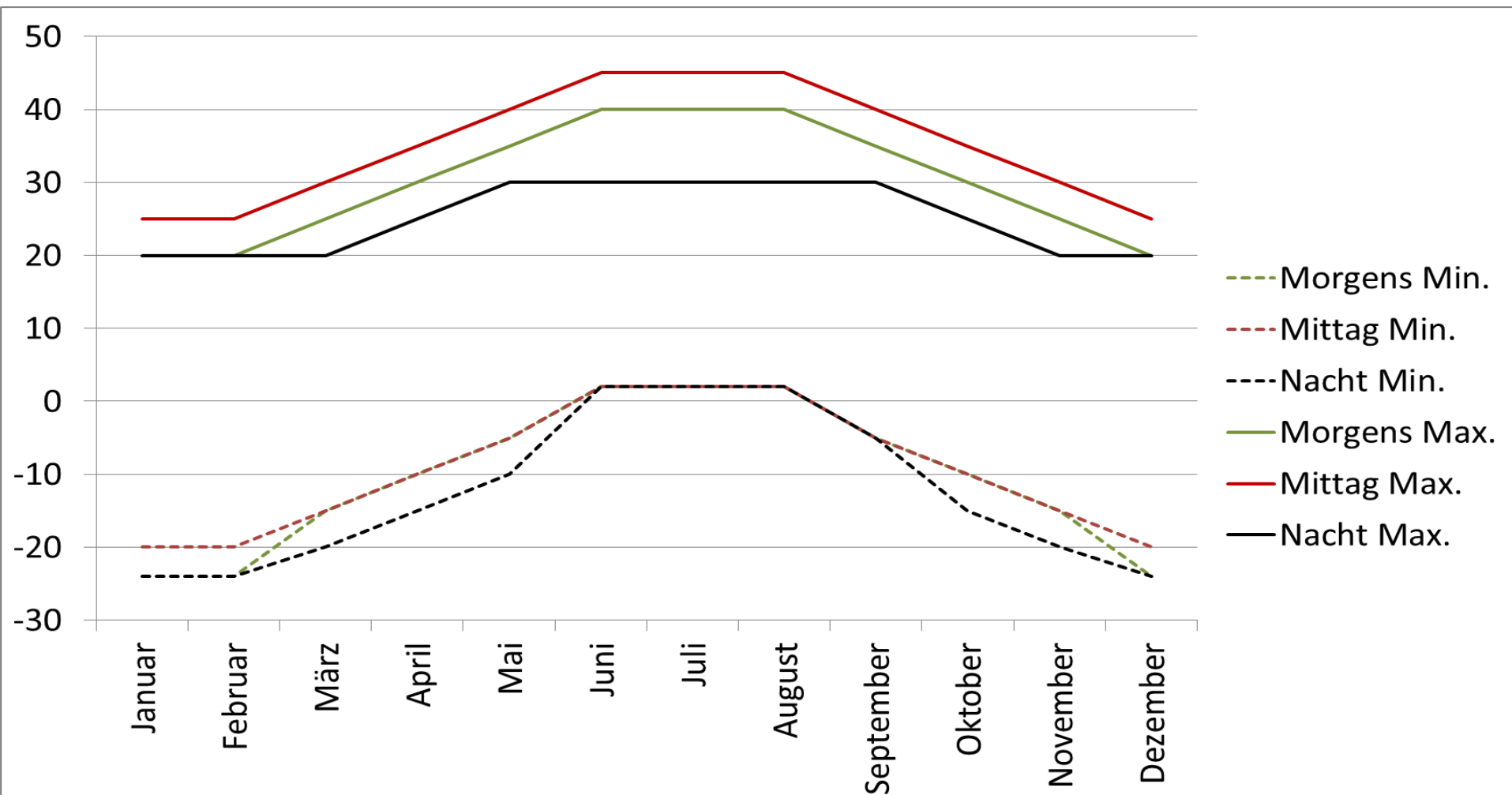


Plausibility Checks System

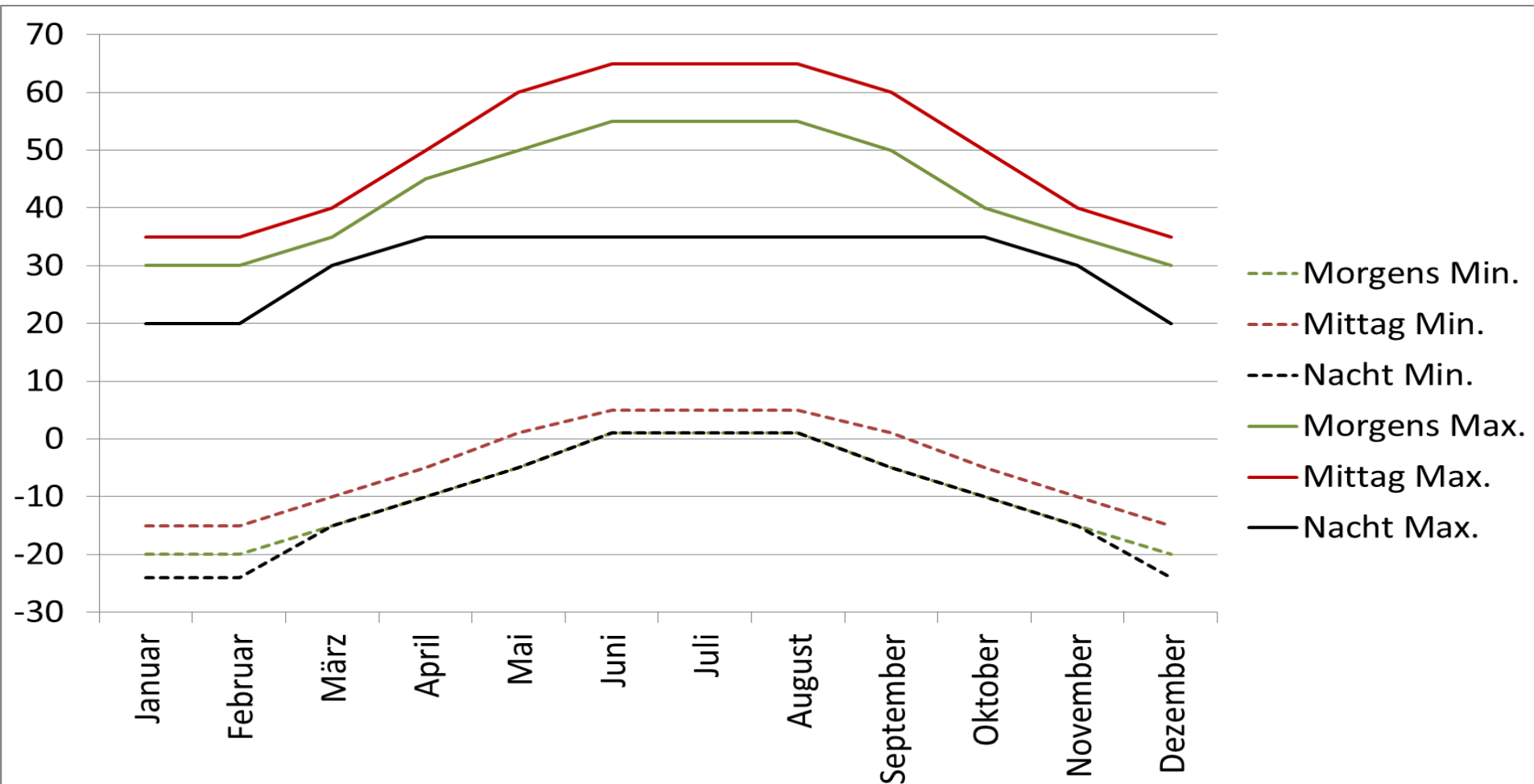
- Java Backend System
- 4 parameters
- Threshold, Time Series, Spatial Check
- BUFR „qualityInformationAwsData“
- Customers, Data Assimilation

- Threshold -> Monthly and daily
- Differential -> TL und TS: 4h const
- Difference -> Difference between Pavement- and Air Temperature only Winter
- Spatial -> Percentiles of Pavement- and Air Temperature only Winter
- Rising / Decreasing -> Makes no sense

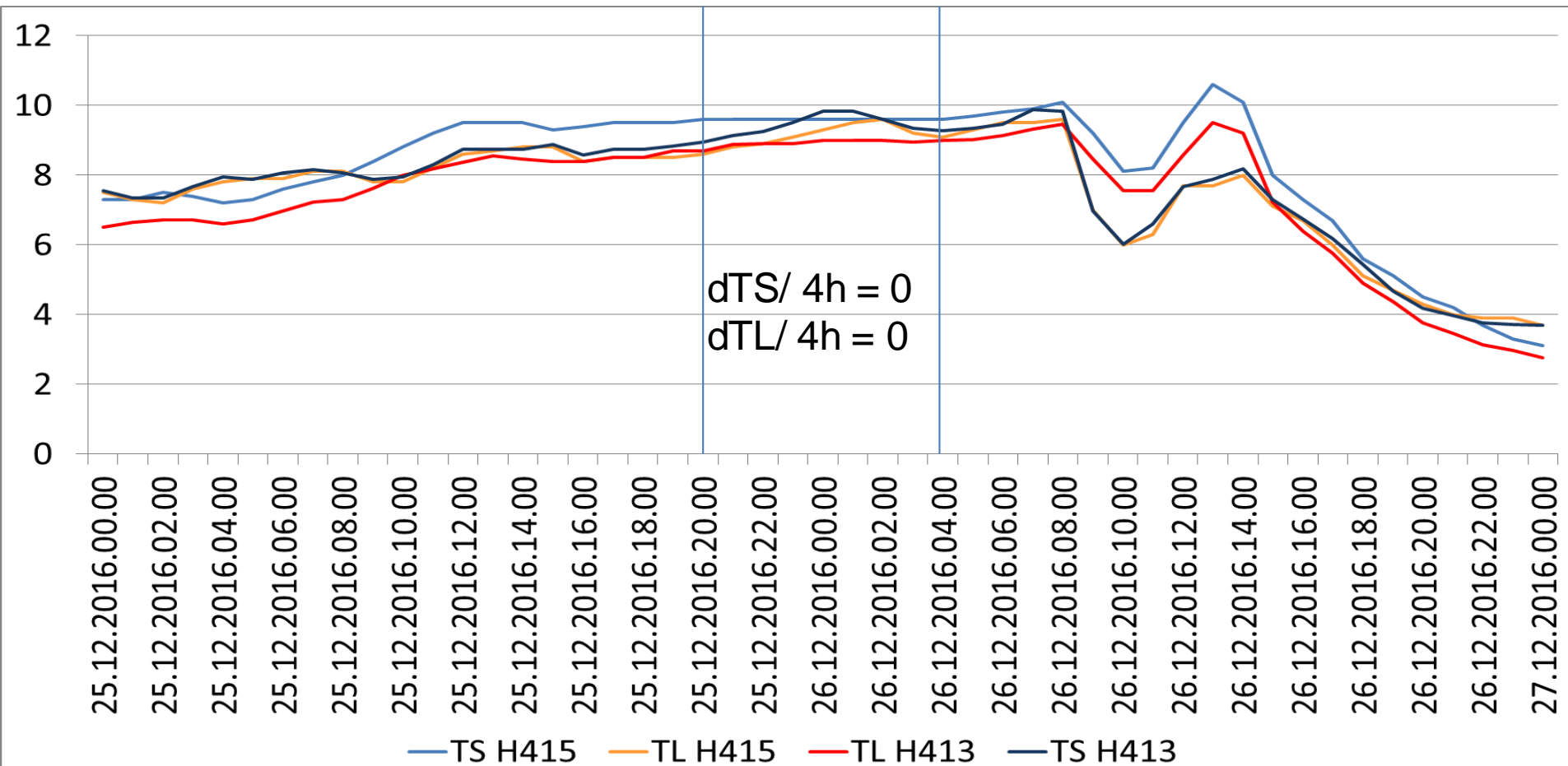
Allowed minimum and maximum Air Temperature



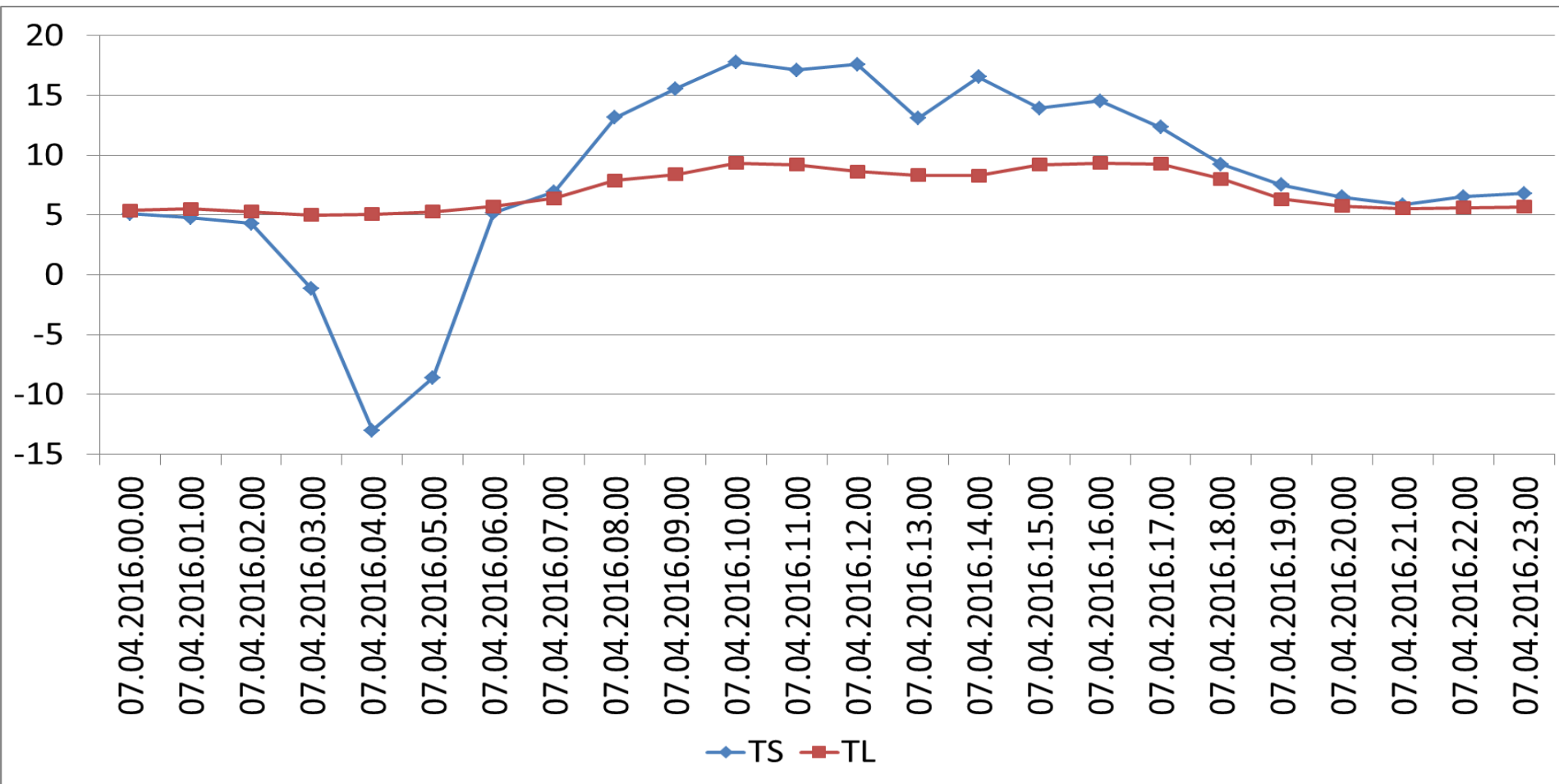
Allowed minimum and maximum Pavement Temperature



Pavement Temperature (TS) und Air Temperature (TL) at two Street Weather Stations



Pavement Temperature (TS) und Air Temperature (TL) at one Street Weather Station



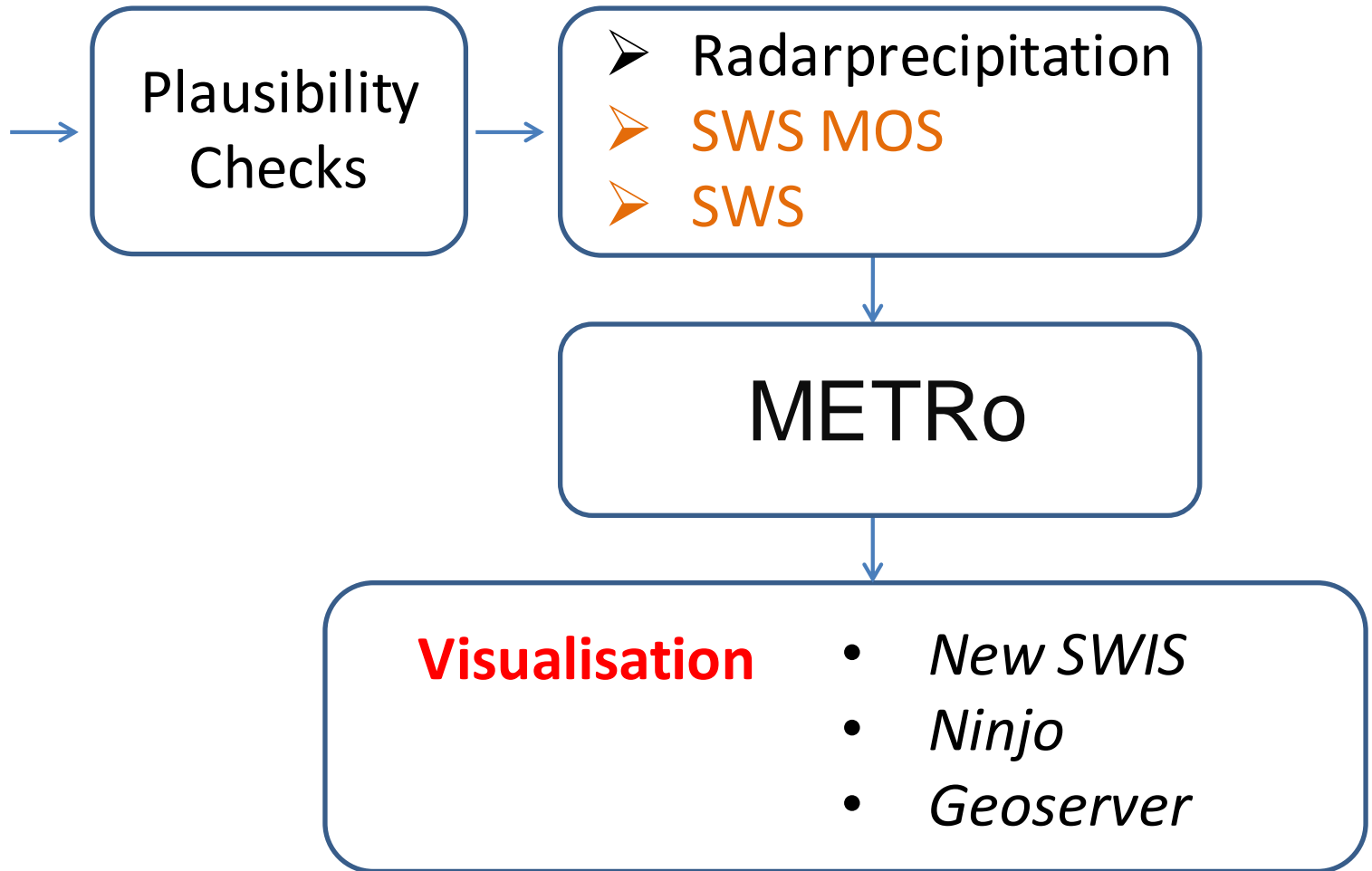
The map shows the Iberian Peninsula with the following distribution of lynx sightings (indicated by blue dots and numbers):

- Northwest (Galicia):** 2, 5, 6, 4, 6, 6, 5, 2, 6, 7, 4, 1, 4, 4, 1, 6, 0, -2, 0.
- Central (Castile and León):** 5, 4, 6, 4, 1, 2, 5, 1, 3, 4, 2, 2, 3, 6, 6, 4, 2, 2, 4, 3, 1, 1, 5.
- South (Andalusia):** 36, 3, 2, 5, 0, 10, 3, 3, 4, 3, 7, 6, 2, 1, 7, 5, 1, 0, 0.
- East (Catalonia):** 2, 5, 0, 10, 3, 3, 4, 3, 7, 6, 2, 1, 7, 5, 1, 0, 0.

Yellow boxes highlight specific areas with high counts: 36, 25, 28, 27, 0, and 0.



wikipedia.org



Meteorological Forecasts

Measurements

Metadata

Air Temperature
Dew Point Temperature
Precipitation Liquid
Precipitation Solid
Coud Cover
Wind speed
Atmospheric Pressure

Air Temperature
Dew Point Temperature
Pavement Temperature
Road Condition
Subsurface Temperature
Precipitation Flag
Windspeed

Road Type
Coordinates
Station Type
Height
Depth of the Sensor

Hourly

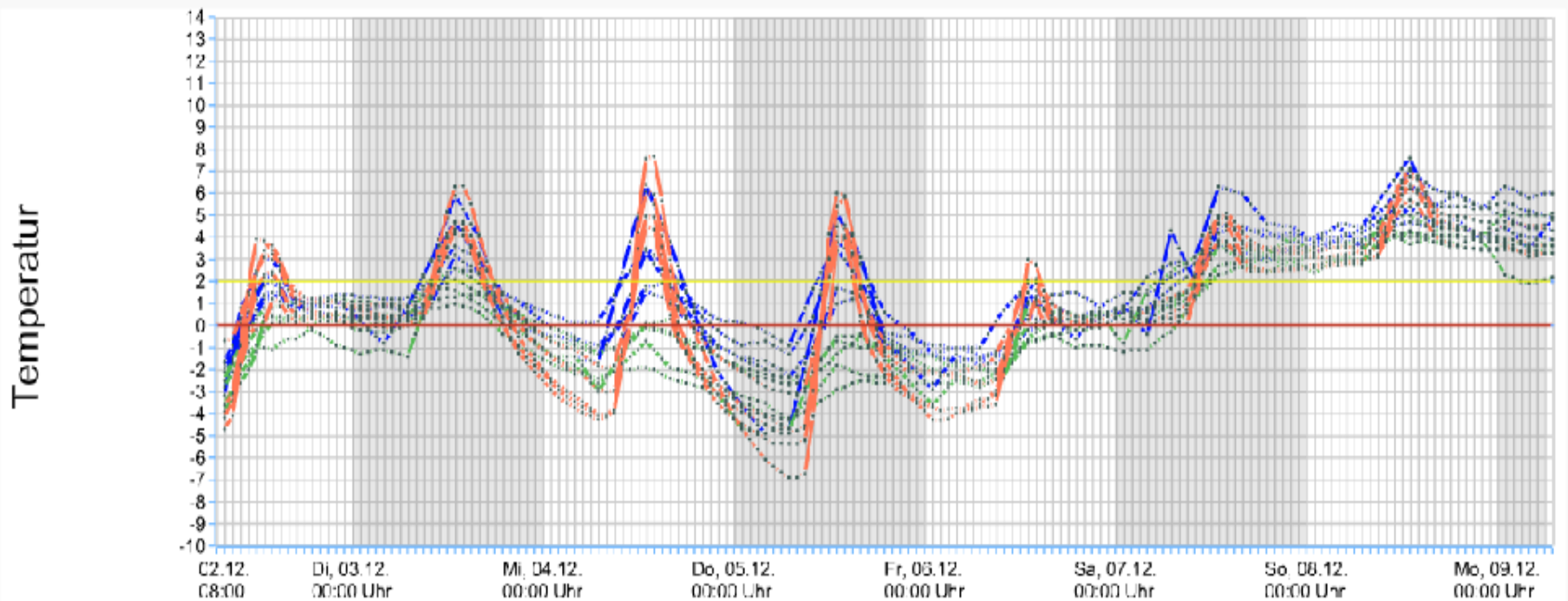
Last 24 hours and
Every 15 Minutes



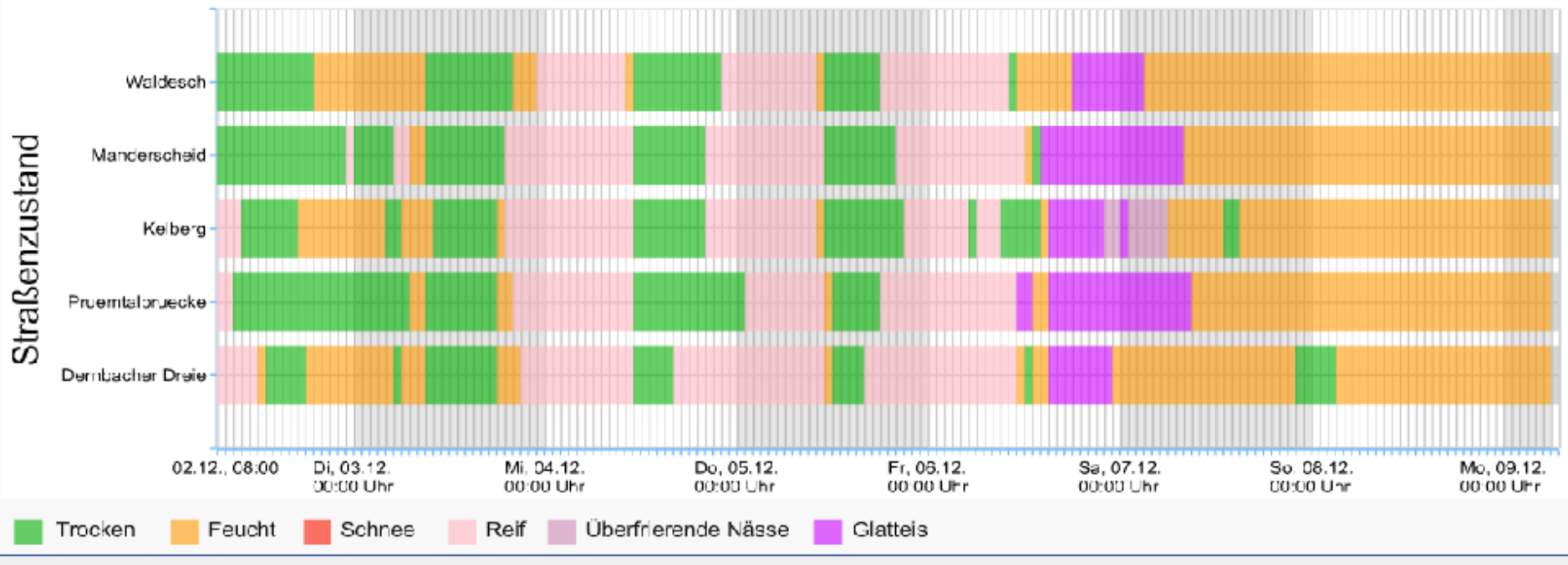
Meteorological Forecasts (SWSMOS)

- NWP ICON (DWD) and IFS (EZMW)
- Point Measurements (SWS, SYNOP)
- Remote Sensing Data
- Forecast Length 7 Days
- Hourly Forecasts
- Training Data 2015-18

(Sebastian Trepte, DWD)



- Air Temperature
- Dew Point Temperature
- Pavement Temperature



Dry

Wet

Snow

Ripe

**Freezing
Wetness**

Black Ice

