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Comments on Criteria for Representativeness

Wolfgang Spangl, 18 October 2022

FAIRMODE CT8 – GUIDANCE DOCUMENT ON THE ESTIMATION OF SPATIAL REPRESENTATIVENESS AND OF EXCEEDANCE SITUATION INDICATORS

Comments Austria (Wolfgang Spangl) on Criteria for Spatial Representativeness Estimation

“THE SIMILARITY CRITERION IS APPLIED WITH A TOLERANCE (OR THRESHOLD) LEVEL”

Proposed criteria in the FAIRMODE CT8 Guidance Document:

“The recommended tolerance level may change depending on the station characteristics and CT8 proposes a tolerance level of:

- ± 10% for rural and urban background stations
- ± 20% for traffic or industrial stations

In addition to the relative tolerance levels, a lower absolute cut-off value of $2\mu\text{g}/\text{m}^3$ is recommended to be used for the lowest concentration ranges.”

Comment (1):

I strongly propose a constant threshold value independent of the observed concentration (not a percentage).

I see no justification for a higher threshold level for higher polluted monitoring sites.

“THE SIMILARITY CRITERION IS APPLIED WITH A TOLERANCE (OR THRESHOLD) LEVEL”

Comment (2):

I see no justification to treat background sites differently than traffic or industrial sites, and to assume that the latter ones being representative for a larger concentration range than background sites.

The criteria proposed in the draft Guidance Document would yield the following representative concentration ranges:

For background sites with concentrations up to 20 $\mu\text{g}/\text{m}^3$: $\pm 2 \mu\text{g}/\text{m}^3$; above 20 $\mu\text{g}/\text{m}^3$ increasing proportional to the concentration by a factor 1.1 (i.e. 10%).

For traffic or industrial sites with concentrations up to 10 $\mu\text{g}/\text{m}^3$: $\pm 2 \mu\text{g}/\text{m}^3$; above 10 $\mu\text{g}/\text{m}^3$ increasing proportional to the concentration by a factor of 1.2 (20%).

This concept does not look consistent.

“THE SIMILARITY CRITERION IS APPLIED WITH A TOLERANCE (OR THRESHOLD) LEVEL”

Comment (3):

I propose choosing the threshold level corresponding to the total concentration range observed in Europe, i.e. a higher value for NO₂ or Ozone compared to PM_{2.5}.

Anyhow, such value should be derived from a comprehensive analysis of all European monitoring data.

“DEFINITION, ASSOCIATED CHARACTERISTICS”

Proposed criteria in the FARIMODE CT8 Guidance Document:

“The geographical area may include discontinuous domains but shall be limited in its extension by the borders of the Air Quality Zone under consideration.”

This requirement may pose problems concerning rural background stations, which can be representative for areas beyond zone boundaries. Confining their representative areas to zone boundaries could require additional rural background stations to completely cover the national territory, which does not seem reasonable at all.

Therefore I propose to modify the criterion for the maximum extent of representative areas for **rural background sites** to a radius of e.g. 100 km, irrespective of zone boundaries.

EXCEEDANCE SITUATION INDICATORS (ESI)

Documentation of the method the exceedance area is identified by in Data-flow G: Many Member States (in any case Austria) use modelling or objective estimation to calculate exceedance areas, but no meta-data on the method is provided in dataflow D or D1b, since modelling or objective estimation are not used for regular air quality assessment.

As an option for future modifications of the IPR, I suggest to include references to assessment meta-data for the ESI in Dataflow G and make the reporting of this meta-data in Dataflow D1b obligatory.

KONTAKT & INFORMATION

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