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## SHORT ABSTRACT

***Abstract title: FAIRMODE CT8 exercise on assessment of Spatial Representativeness of monitoring stations***

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## Abstract

The assessment of the spatial representativeness (SR) of monitoring stations has been discussed within the air quality community for a long time. FAIRMODE has been involved in this discussion since the early days, given the potential role of modelling in this assessment process and the relevance of SR in any process where observations from monitoring stations are combined with modelling (validation, data fusion or data assimilation…).

Over the last years progress has been made within the FAIRMODE community to more clearly identify the various application fields of SR (population exposure, exceedance situations, monitoring network design, model validation,…) and the concept of a SR area was put forward which serves many purposes of these application domains. Eventually a definition was proposed to practically delineate SR areas of monitoring stations. The proposed methodology is based on (fit-for-purpose) modelling results and follows a discontiguous approach to allocate an SR area within the boundaries of the air quality zones defined under the EU Ambient Air Quality Directive (AAQD). The simple and robust assessment method relies on annual averaged concentration fields within a given margin of tolerance to identify the SR area.

Various modelling teams of the FAIRMODE CT8 community have evaluated and tested the methodology for various monitoring stations in Europe, covering the whole spectrum of rural, urban background and traffic sites. Based on the findings of the CT8 exercise, the proposed methodology was further refined and is now being proposed as the approach to be used under the revised AAQD. In addition extensions of the

methodology are proposed which will be further evaluated by the CT8 group on its scientific value and practical implementation in the context of the AAQD.

## Motivation

FAIRMODE is a Forum for Air Quality Modeling created for exchanging experience and results from air quality modeling in the context of the AAQD and for promoting the use of modeling for air quality assessment and management in a harmonized manner between Member States. In this paper joint activities of the working group CT8 are presented. The exercise on spatial representativeness resulted in a consolidated proposal for a long standing open issue in the interface between the measurement and modelling community.