COMBINING DATA ASSIMILATION AND SOURCE APPORTIONMENT TECHNIQUES TO MODEL LOCAL AND BACKGROUND CONTRIBUTIONS TO PM CONCENTRATIONS



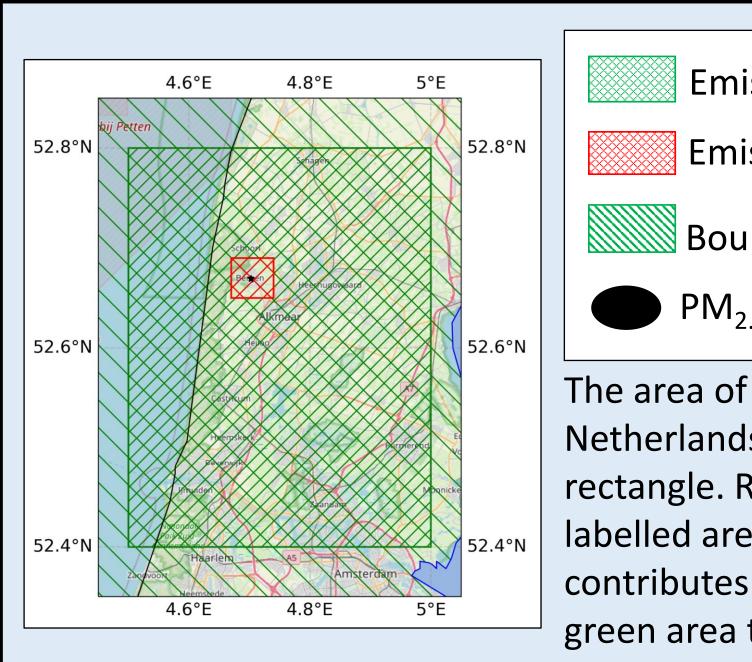
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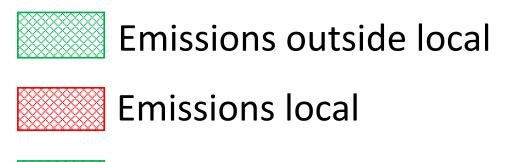
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Introduction

Air pollution over urban environments is a mix of pollutants emitted locally as well as pollutants advected from different regions. To give policy makers the possibility to take effective measures within their domain it is of relevance to discriminate between local and background contributions. In this study we investigate an integrated approach using the source apportionment and data assimilation modules of the regional Chemical Transport model (CTM), LOTOS-EUROS. The aim is to provide an innovative way of assimilating measurements within the model by separating between dependencies on local emissions and background contributions.

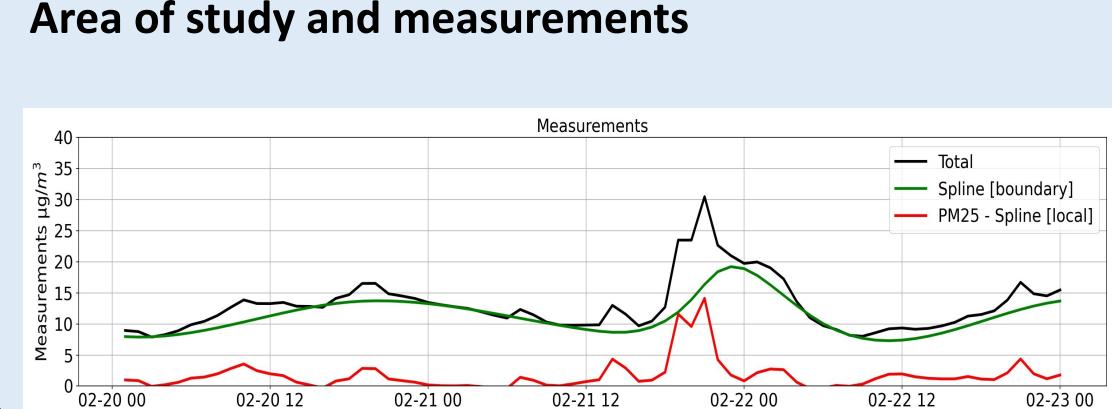




Boundary conditions

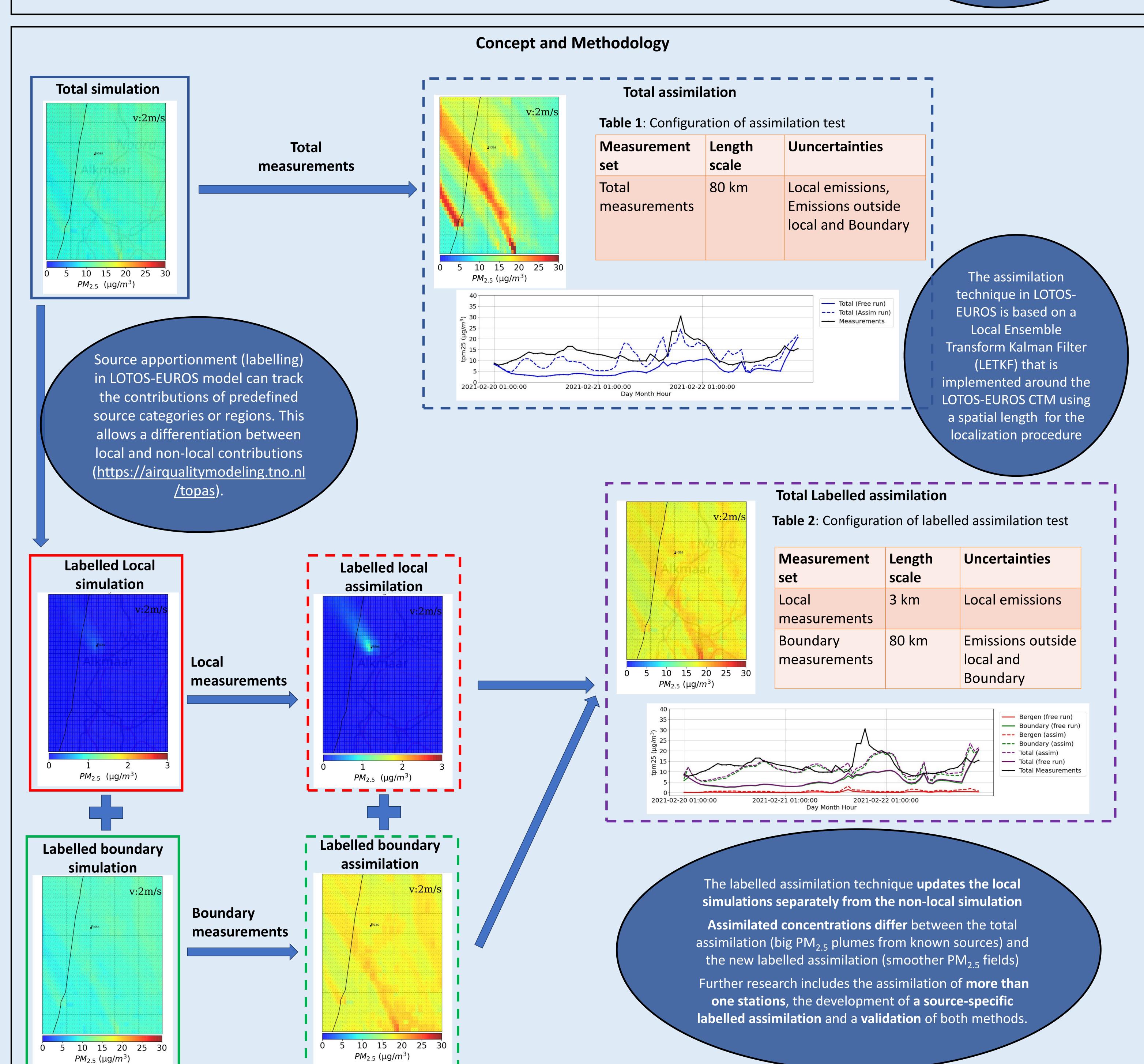
PM_{2.5} measurement site

The area of study, Bergen in the Netherlands, is shown within the green rectangle. Red rectangle denotes the labelled area (Bergen region) which contributes to local concentrations and green area the non-local contributors.



Timeseries of total, local and boundary PM2.5 measurements.

During the project
"Samenwerking
Houtrookonderzoek" a FIDAS
instrument was installed in the
region of Bergen, the
Netherlands, measuring PM_{2.5}.
The total measurements are
separated in two timeseries;
the local and the backgroundboundary. The spline of
minimums, time-series based
method is used.



Acknowledgements