

# GLOBAL GEO HEALTH DATA CENTER

## Introduction

Our environment has a considerable impact on health. For instance, air pollution increases the risk for cardiovascular disease, a warm and humid climate supports the spread of vectors causing malaria, and green space may improve mental health. Understanding these health impacts is a massive challenge as it requires quantifying the exposure to these environmental variables for each individual in a population. The Global and Geo Health Data Centre (GGHDC) is taking this challenge by providing a web service that enriches population data with information on personal exposures to the environment. We combine high performance geocomputation and spatial data analysis to calculate personal exposures for individuals using their location data, either directly measured using mobile devices or by agent-based simulation modelling. Exposures are calculated from archived national and global environmental information (up to 5 m spatial and 1 h temporal resolution) or data generated on the fly using environmental models running as microservices.

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- Human Geography & Planning
- University Medical Centre Utrecht
- Physical Geography (PCRaster)
- ITS
- Institute for Risk Assessment
- SURFsara

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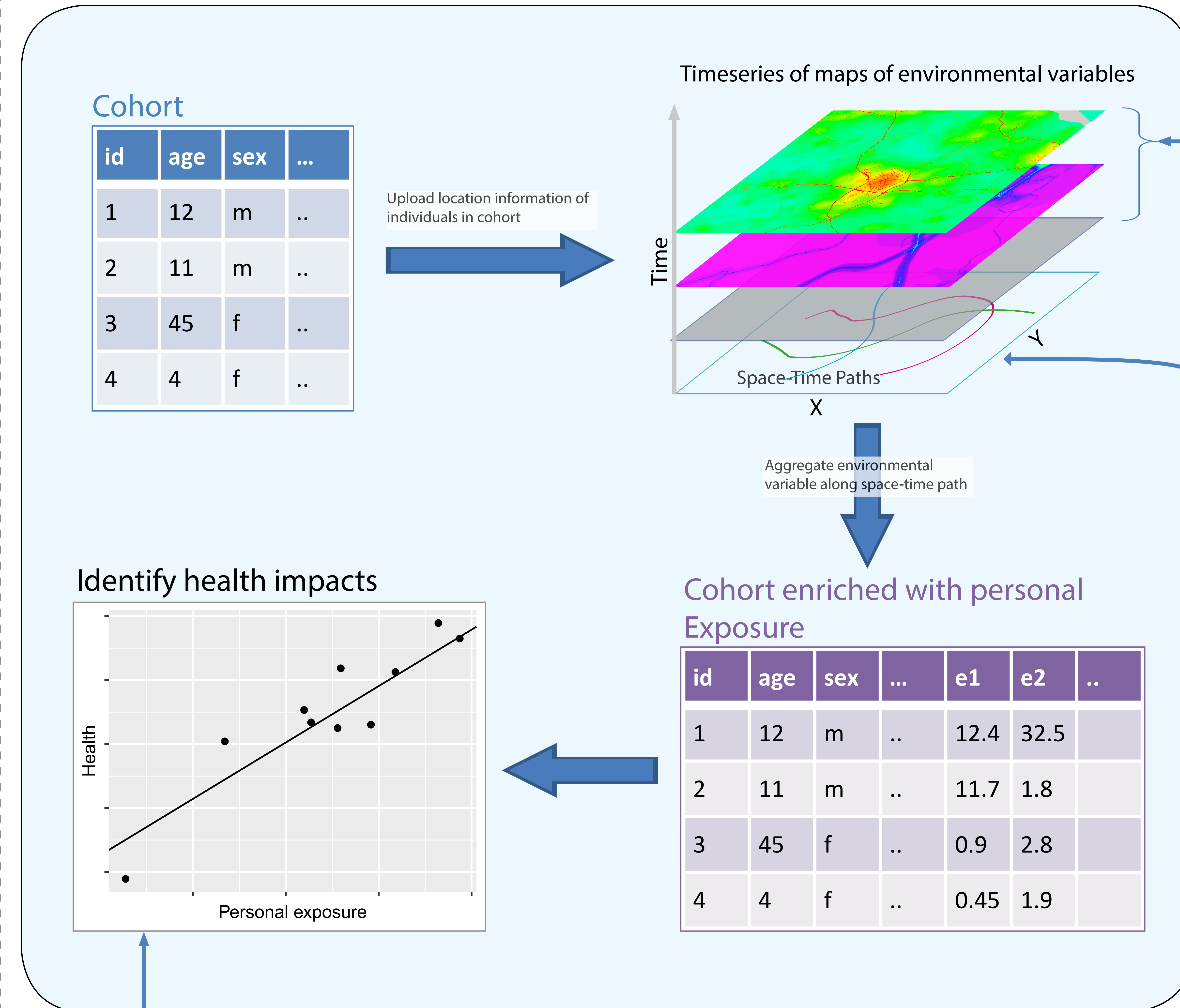


UMC Utrecht  
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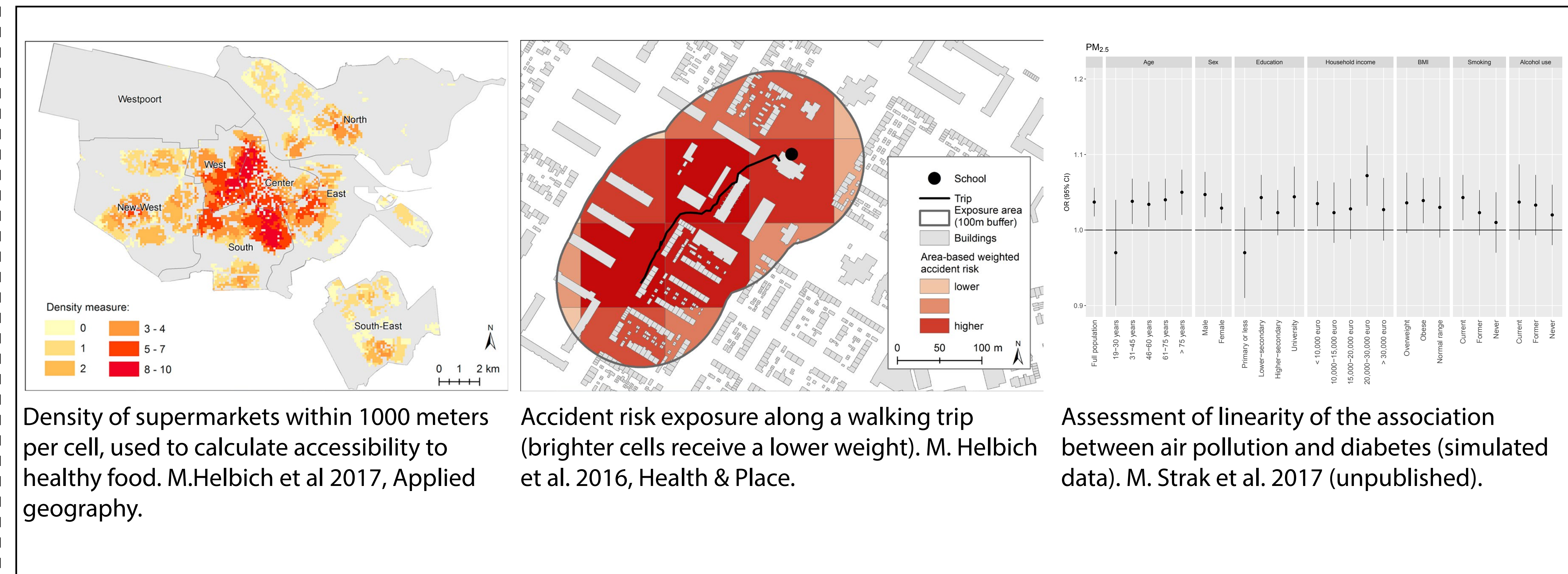


Utrecht University

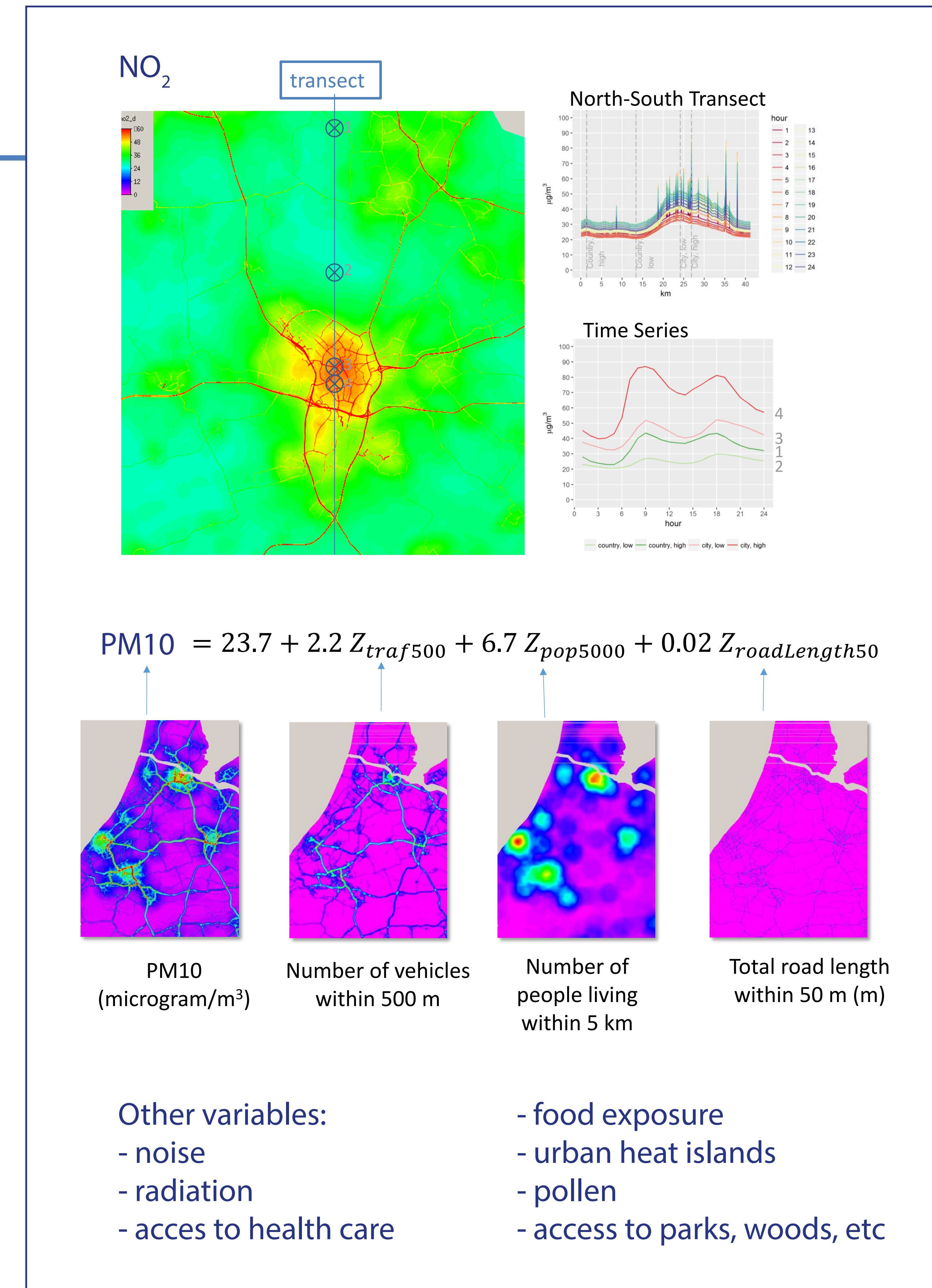
## Scientific Framework



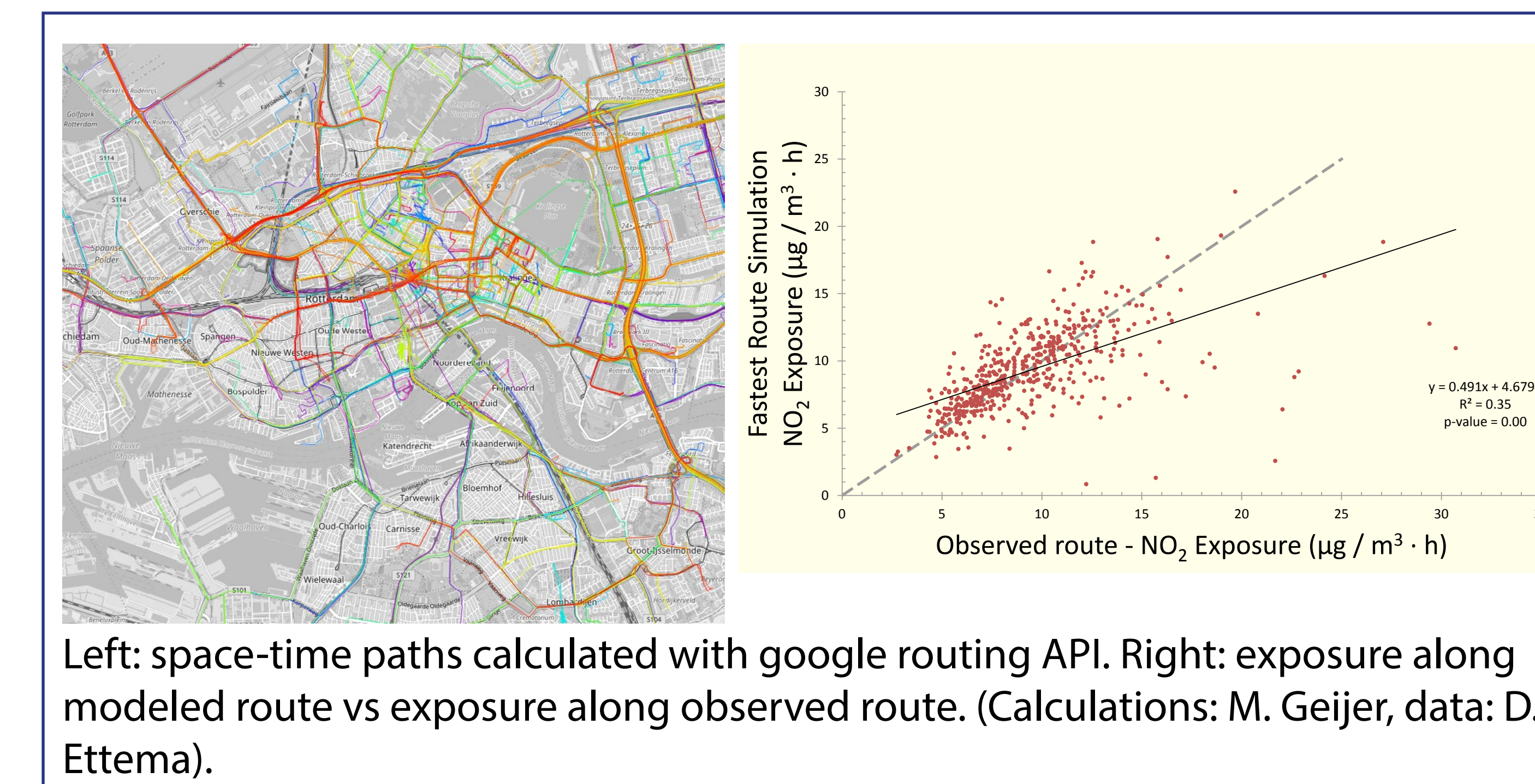
## Examples health impact



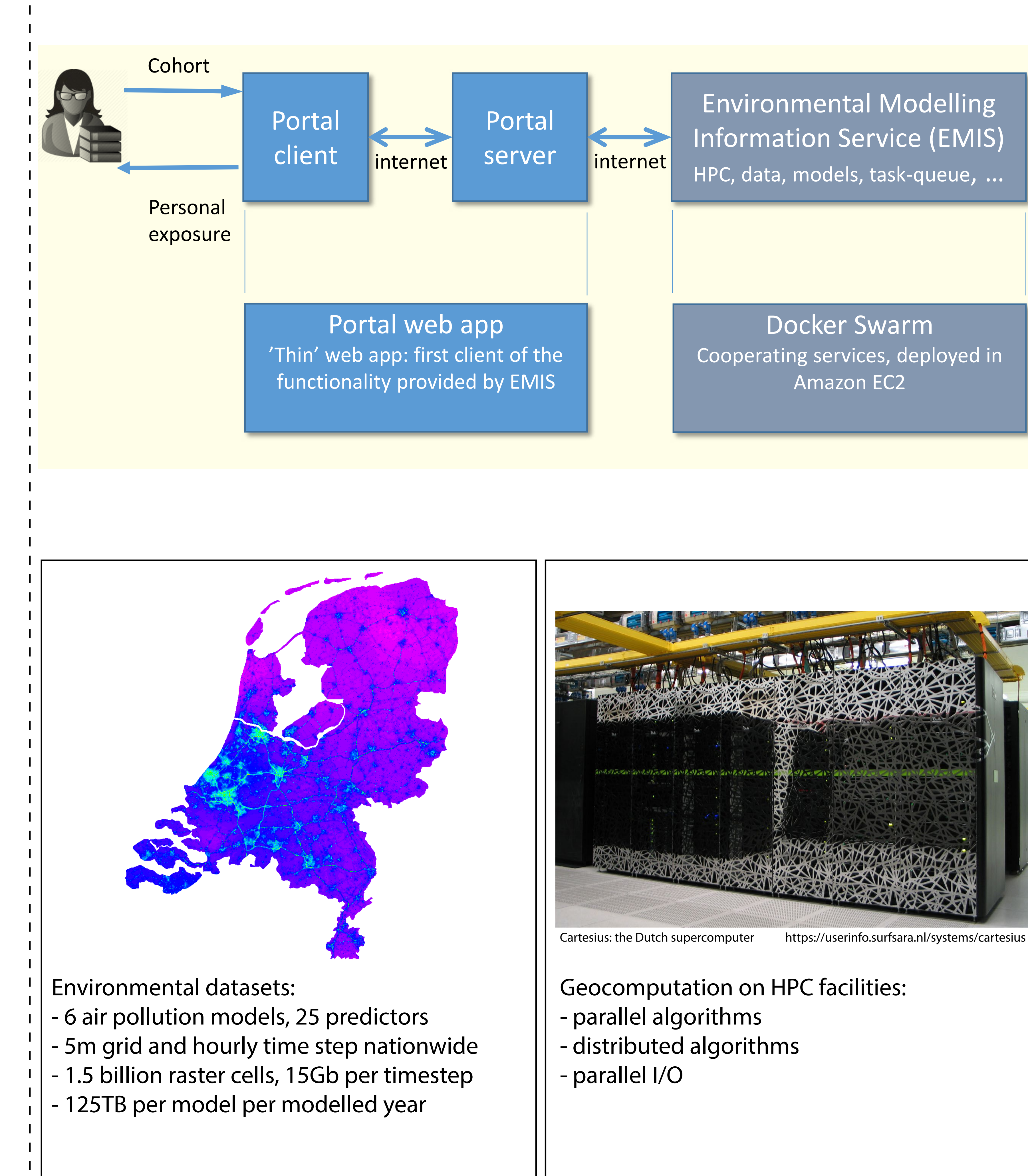
## Example: airpollution



## Example: modelled space-time path



## Software architecture: web app + services



## Modelling software stack

