

An aerial photograph of Rotterdam, Netherlands, showing the city's dense urban landscape, the harbor, and the Erasmus Bridge. The text "Ruisdael Urban campaign: Rotterdam" is overlaid in white. The background shows a mix of modern high-rise buildings and older residential areas, with the harbor water in the foreground and the Erasmus Bridge crossing the water in the middle ground.

# Ruisdael Urban campaign: Rotterdam

Sander Houweling, Katharina Heimerl (VU)  
+ Ruisdael partners



# Ruisdael research infrastructure project

- Ruisdael observatory: Dutch NWO funded measurements infrastructure for atmospheric composition and meteorology
- GHG: Consists of a South-West to North-East transect of measurement sites
- AQ: Distributed network of about 90 sites
- + Mobile infrastructure (2 instrumented trailers, aircraft, drones)



# Ruisdael measurement facilities

Sky arrow aircraft



Cabauw tower



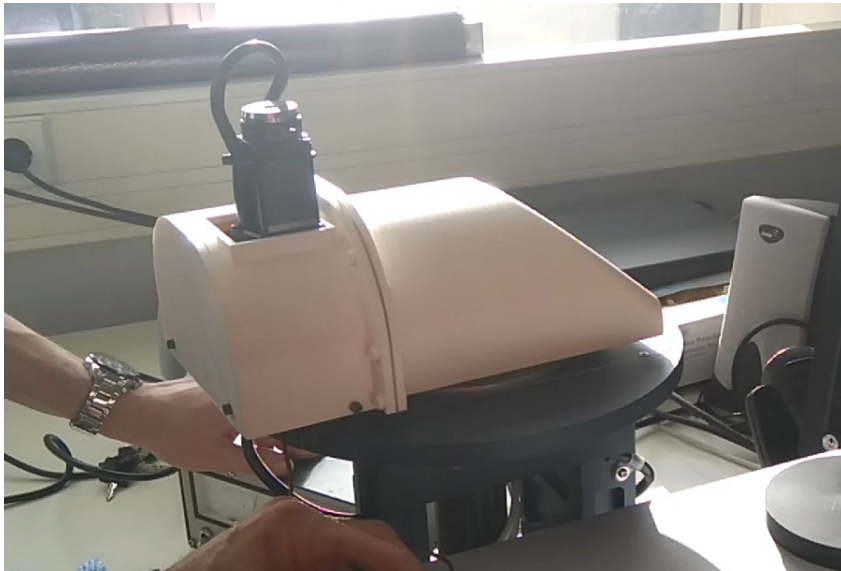
Mobile trailer





# Total column measurements in Ruisdael

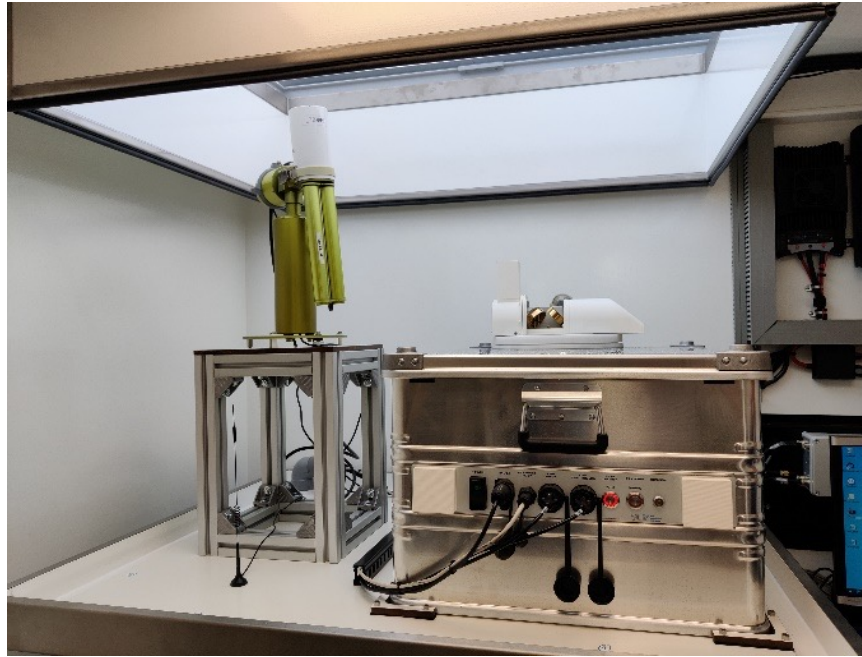
- Cimel + Bruker em27/SUN + automated rain cover





# Total column measurements in Ruisdael

- Trailer + adjustable platform for the instrumentation





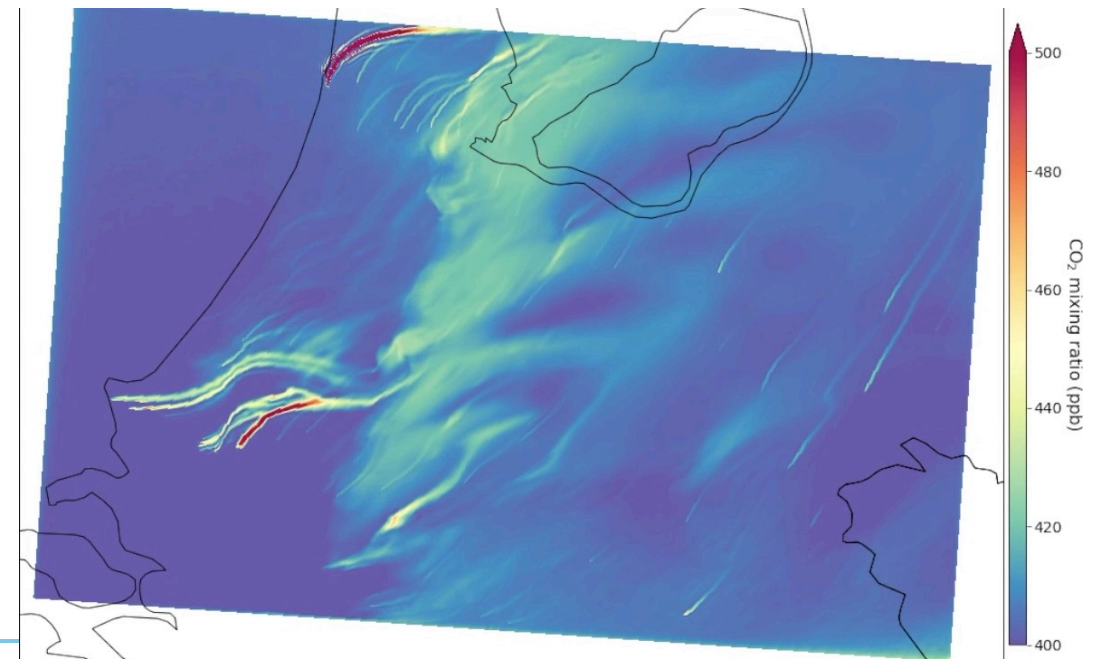
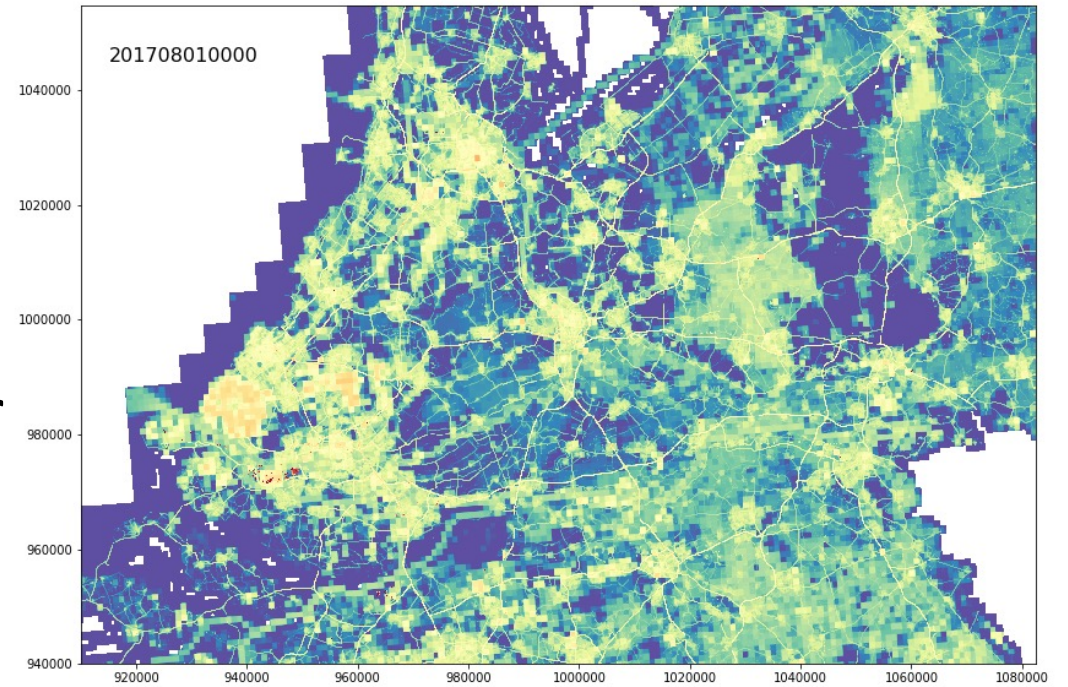
# Monitoring of the Randstad and Rotterdam





# Dutch fossil CO<sub>2</sub> emissions

- Population 0.5 – 1M
- CO<sub>2</sub> emission of Rotterdam = 30 Mt/yr
- 90% from the harbor
- Modelling at 100m resolution in the Dutch LES Dales





# Ruisdael Rotterdam campaign

- Ruisdael Urban campaign, 3 weeks in Sept. 2022
- Rotterdam: associated partner of ICOS-Cities
- Budgeting of CH<sub>4</sub> and CO<sub>2</sub> emissions from the city and harbor
- Interest in extension of the total column measurements (upwind – downwind gradients)

Interest to join? Contract S. Houweling