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### **Methods for observation and quantification of trace gas emissions from diffuse sources**

Hensen, A.

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## CV Author

Arjan Hensen

- 1966 Born in Hilversum the Netherlands
- 1979 -1985 VWO Willem de Zwijger College Bussum
- 1985 -1990 Physics University of Utrecht
  - Joined a JGOFS leg from Iceland to the Azores working on aerosol formation and atmospheric electricity.
- 1990 - now Energy research Centre of the Netherlands

Arjan Hensen is working at ECN since 1990. He has extensive experience with development and implementation of measurement techniques for air quality and climate change research. He worked in projects related to greenhouse gas, nitrogen issues and particulate matter. In the same fields of research Arjan has worked on development of several knowledge dissemination tools.

### Key Activities:

- Greenhouse gas measurements
  - Cabauw 200m tower observations
  - CO<sub>2</sub> Flux measurements
    - Gradient measurements, eddy covariance and rea measurements
  - CH<sub>4</sub> emission measurements from landfills and agricultural sources
    - Box and plume measurements for Afvalzorg & National ROB projects, BSIK project (documented in thesis Petra Kroon)
    - Individual landfill studies for ESSENT and SMINK
  - N<sub>2</sub>O emission measurement for waste water treatment & agricultural sources
  - Mobile emission measurements
    - MIDAIR & GREENGRASS EU projects and survey project for the ministry of environment
  - GHG studies for biomass projects
    - Emission measurements from a lagoon in Costa Rica
    - Assessment studies for Colombia, Sierra Leone and Indonesia
- Ammonia exchange between atmosphere and biosphere
  - Measurement of NH<sub>3</sub> emission and deposition
    - STOP programme, National projects, GRAMMINAE & Nitro Europe EU projects
  - Emission measurements housing systems
    - RAV project emissions from a chicken housing system
  - Deposition monitoring Speuld
    - Life & NitroEurope EU projects
  - Landscape scale emission monitoring
    - Nitro Europe EU project, National NFW project
  - Emissions from manured fields
    - Plume measurements compared with mass balance and lidar.
- Aerosol and radiation measurements
  - closure experiments
    - MEMORA project
  - PM, SO<sub>2</sub> & NO<sub>x</sub> Emissions from ships
    - National projects for sea going and inland shipping
  - Urban air quality measurements
    - Project for the municipality of Den Bosch
  - Design of a energy-collecting road

- Dissemination tools
  - Trilemma energy game
  - Nitrogenius N game
  - N-Visualisation Instrument
  - Clean = Cool tool

**Teaching Experience:**

'94, '97 Beijing University lectures

'03 – '11 Annual Nitrogenius seminar Wageningen University

Internship coaching for guests from Spain, Philipines, France, China and Switzerland

Internship coaching for Dutch students (Aline Kraai, Dorien Lolkema)

PhD supervisor for Petra Kroon