Loobos tower measuring land atmosphere exchange of CO_2 , water vapor, O_3 and VOC's

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New developments in Ruisdael

Science questions

- Upgrade to ICOS Class 2 Ecosystem site
- New: Ozone fluxes
- New: VOC fluxes
- New: DTS temperature sensing
- New: 220 V Power supply

With these developments, Loobos will turn into a world class ecosystem research site, ready to welcome international researchers to collaborate in campaigns.

Site background

The Loobos tower flux station (52° 09' 59.34" N, 5° 44' 36.79" E, 25 m a.s.l.) was established in 1995 in a Pine forest (89% *Pinus sylvestris*) on sandy soil in the Netherlands. Since. 1997 the tower has been measuring the fluxes of CO2, water and heat almost continuously. With 20+ years of data, our record is one of the longest worldwide.



- How do ecosystem carbon and water fluxes respond to climate change and climate extremes
- Resilience, climate sensitivity or vegetation dynamics?
- Role of air quality for the ecosystem
- Role of the forest for air quality
- How does turbulence really penetrate into the forest?
- Regional variability: PH-WUR and Ruisdael model comparison

Climate sensitivity or vegetation dynamics?

NEE shows an increase over time during the 20 year period of record. This seems mainly driven by a *decrease* in winter Re. Is this related to changing

Drought 2018

Also consider response to returning rains.



vegetation (encroaching cherry)?













