



ICOS

●●●
Integrated
Carbon
Observation
System

SCIENCE CONFERENCE
UTRECHT, NL & ONLINE
13-15 SEPTEMBER 2022

TRACKING PROGRESS TO CARBON NEUTRALITY

13-15 September 2022
Utrecht, Netherlands and online



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#ICOS2022SC

icos-ri.eu/sc2022

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WELCOME TO THE ICOS SCIENCE CONFERENCE 2022!

The biennial ICOS Science Conference gathers over 400 scientists from all across the world to discuss greenhouse gas measurements and climate change.

With a record number of abstracts received, ICOS Science Conference is bigger than ever this year. The themes of the conference vary from purely scientific sessions to ones related to policy making, education and new developments in instrument manufacturing.

The conference provides exceptional opportunities to engage with the ICOS community and fellow scientists from all over the world.

We are looking forward to facilitating interaction between all ICOS domains and beyond, as well as inspiring vivid discussions where new research ideas and topics can emerge.

We wish you an enjoyable conference and look forward to connecting with you!

The Science Conference team

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MONDAY

BADGE PICK UP
AT 14:00-18:00
GROUND FLOOR

ICE-BREAKER EVENT
AT 16:00-18:00
PARK 6, 6TH FLOOR

Come meet the other Science Conference participants already in advance during our Ice-Breaker event! Complimentary drinks are also included.



PLENARY SESSIONS

HERTZ

- 9:00** Opening words | *Director General Werner Kutsch ICOS ERIC*
- 9:25** Writing history: CO₂ respiration due to 1,000 years of Dutch coastal peatlands cultivation | *Erkens, Gilles*
- 9:50** The CoCO₂ global nature run as an evaluation tool of the integrated earth system model to support the monitoring of greenhouse gas emissions | *Anna Agusti-Panareda*
- 10:15** COFFEE BREAK **PARK 6**
- 10:45** US fossil fuel-CO₂ emissions based on measurements of atmospheric radiocarbon | *John Miller*
- 11:10** Results from the 1st ICOS OTC pCO₂ instrument inter-comparison 2021 | *Tobias Steinhoff*
- 11:35** Addressing forest canopy decoupling on a global scale | *Georg Jocher*
- 12:00** LUNCH BREAK **PARK 6**

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TUESDAY

CONCERT:
TEMPERATURE MUSIC
AT 19:00-20:00 HERTZ,
TIVOLI VREDENBURG

In the "Temperature music", the graphs of climate change, CO₂ emissions and rising temperatures are incorporated as a 'heartbeat'. The heartbeat in the music is accelerating according to the temperature variations. The end of the piece will change every time that it is performed, based on the temperature deviation of the time.

Orchestra: Utrecht Studenten Concert (USC)
Composer: Sem Hak
Conductor: Sander Teepen

PARALLEL SESSIONS

● ● ● 14-15:30

SESSION 1 | HERTZ, 7th floor
Part 1/2: Drivers of GHG fluxes from productive and managed peatlands: measurements, modelling and mitigation

SESSION 2 | CLOUD 9, 9th floor
Part 1/2: Utilizing eddy covariance flux networks for improved understanding of carbon-water relationships at multiple spatial and temporal scales

SESSION 3 | CLUB 9, 9th floor

- Informing transformative change towards a sustainable future using integrated environmental research infrastructures
- Community Engagement, Training and Outreach
- Ground-based remote sensing measurements of greenhouse gases and their application for carbon cycle studies, satellite and model validation and building MVS capacity

● ● ● 16-17:30

SESSION 4 | HERTZ, 7th floor
Part 2/2: Drivers of GHG fluxes from productive and managed peatlands: measurements, modelling and mitigation

SESSION 5 | CLOUD 9, 9th floor
Part 1/2: New developments in mapping regional CO₂ fluxes

SESSION 6 | CLUB 9, 9th floor

- The value chain of (surface) ocean CO₂ measurements

- New developments in estimates of the ocean sink for CO₂

POSTER SESSIONS

● ● ● 13-14 & 17:30-19

See last spread for more information.

PLENARY SESSIONS HERTZ

- 9:00** Direct observations of CO₂ emission reductions due to COVID-19 lockdown and their subsequent evolutions | *Giacomo Nicolini*
- 9:25** Towards an International standard for Urban Greenhouse Gas Monitoring and Assessment | *Jocelyn Turnbull*
- 9:50** New constraints on photosynthesis from atmospheric tracers ($\delta^{18}O$, $\Delta^{17}O$, Δ^{47} , COS, O₂) and remote sensing proxies (SIF, NIRv) | *Koren Gerbrand*
- 10:15** COFFEE BREAK PARK 6
- 10:45** Parallel sessions (see below)
- 12:30** LUNCH BREAK PARK 6

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WEDNESDAY

CONFERENCE DINNER
AT 20:00-22:00

A sit-down conference dinner with a seasonal surprise menu. The location is shared via email with those who have purchased a separate dinner ticket.

PARALLEL SESSIONS

● ● ● 10:45-12:30

SESSION 7 | HERTZ, 7th floor

- Part 1/5: Emission modelling and atmospheric monitoring of anthropogenic carbon emissions

- Ground-based remote sensing measurements of greenhouse gases and their application for carbon cycle studies, satellite and model validation and building MVS capacity

SESSION 8 | CLOUD 9, 9th floor

Part 1/2: Abrupt changes in greenhouse gas fluxes in response to extremes: learning from observations to improve future projections

SESSION 9 | CLUB 9, 9th floor

- Stability of carbon pools following changes in climate and management in organic soils
- Utilizing eddy covariance flux networks for improved understanding of carbon-water relationships at multiple spatial and temporal scales

● ● ● 14:30-16

SESSION 10 | HERTZ, 7th floor

Part 2/5: Emission modelling and atmospheric monitoring of anthropogenic carbon emissions

SESSION 11 | CLOUD 9, 9th floor

- Part 1/4: Towards operational monitoring of greenhouse gas emissions - the combination of satellite and in-situ data in an integrated system approach

- Using the ICOS stations for investigating fluxes of reactive gases and aerosols in terrestrial ecosystems

SESSION 12 | CLUB 9, 9th floor

Part 1/2: GHG Fluxes at ecosystem level: soil and woody-tissue

POSTER SESSIONS

● ● ● 13-14 & 17:30-19

See last spread for more information.

● ● ● 16:30-18

SESSION 13 | HERTZ, 7th floor

Part 3/5: Emission modelling and atmospheric monitoring of anthropogenic carbon emissions

SESSION 14

CLOUD 9, 9th floor
Enhancing the use of greenhouse gas observation systems to inform, enable and frame policy

SESSION 15

- CLUB 9, 9th floor
- Part 2/2: GHG Fluxes at ecosystem level: soil and woody-tissue
- Abrupt changes in greenhouse gas fluxes in response to extremes: learning from observations to improve future projections

● ● ● 18-19:30

SESSION 16

HERTZ, 7th floor
Manufacturers session & private sector impact and influence

PLENARY SESSIONS HERTZ

9:00 Supply-consumption simulations of natural gas in the European Union (EU) countries: Can Russian gas be replaced for the post Ukraine crisis period? | *Chuanlong Zhou*

9:25 Carbon and water fluxes over a urban park area in Naples | *Gabriele Guidolotti*

9:50 Importance of harmonizing radon datasets for reducing uncertainty in greenhouse gas emission estimates | *Dafina Kikaj*

10:15 COFFEE BREAK PARK 6

10:45 Parallel sessions (see below)

12:30 LUNCH BREAK PARK 6

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THURSDAY

ARE YOU GOING ON ONE OF THE EXCURSIONS?

Remember to check the departure for Friday 16th. The registration for the excursions is already closed.

PARALLEL SESSIONS

● ● ● 10:45-12:30

SESSION 17 | HERTZ, 7th floor

- Part 4/5: Emission modelling and atmospheric monitoring of anthropogenic carbon emissions

- Part 2/4: Towards operational monitoring of greenhouse gas emissions - the combination of satellite and in-situ data in an integrated system approach

SESSION 18 | CLOUD 9, 9th floor

The role of radon gas as tracer of atmospheric processes, air mass origin and indirect retrieval of greenhouse gas emissions

SESSION 19 | CLUB 9, 9th floor

- Better constraining the European blue carbon stock
- The value chain of (surface) ocean CO₂ measurements
- The fate of terrigenous organic carbon along the land-ocean aquatic continuum
- Carbon cycle in the Mediterranean region: from the local to the regional scale

● ● ● 14:30-16

SESSION 20 | HERTZ, 7th floor

Part 3/4: Towards operational monitoring of greenhouse gas emissions - the combination of satellite and in-situ data in an integrated system approach

SESSION 21 | CLOUD 9, 9th floor

- Informing transformative change towards a sustainable future using integrated environmental research infrastructures
- Abrupt changes in greenhouse gas fluxes in response to extremes: learning from observations to improve future projections

- Effect of winter 2020 anthropogenic and climate anomalies on terrestrial, atmosphere, and ocean greenhouse gas exchange

SESSION 22 | CLUB 9, 9th floor

New developments in mapping regional CO₂ fluxes

POSTER SESSIONS

● ● ● 13.30-14:30 & 18-19:30

See last spread for more information.

● ● ● 16:30-18

SESSION 23

HERTZ, 7th floor
Part 5/5: Emission modelling and atmospheric monitoring of anthropogenic carbon emissions

SESSION 24

CLOUD 9, 9th floor
Part 4/4: Towards operational monitoring of greenhouse gas emissions - the combination of satellite and in-situ data in an integrated system approach

SESSION 25

CLUB 9, 9th floor
Carbon cycle in the Mediterranean region: from the local to the regional scale

VENUE

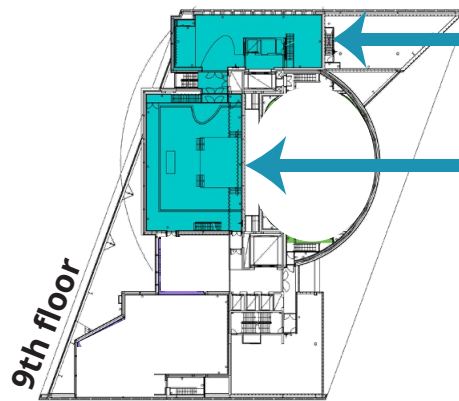
FINDING YOUR WAY

The registration & information desk is located at the ground floor: Begane Grond.

During the conference we have activities on floors 5, 6, 7 and 9.

QUESTIONS?

Contact us at:
conference@icos-ri.eu or come by the information desk



CLUB 9

- parallel sessions
- poster presentations

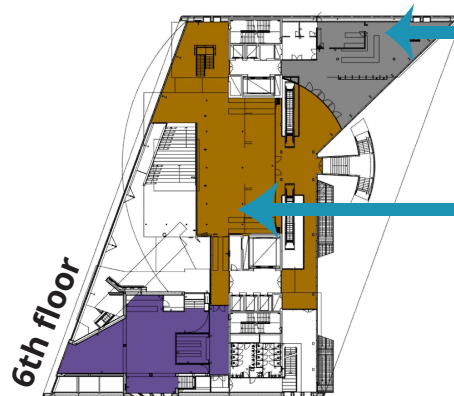
CLOUD 9

- parallel sessions
- poster presentations



HERTZ

- plenaries
- parallel sessions
- poster presentations
- concert

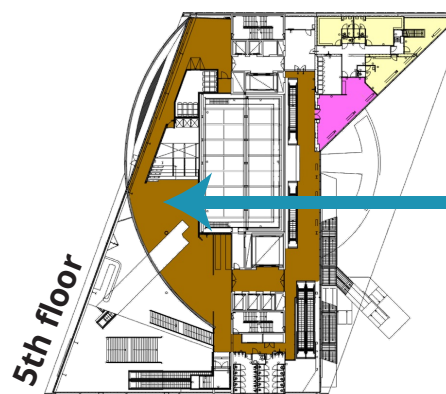


PUNT

- poster boards
- poster PICO presentations in the same rooms as the parallel sessions

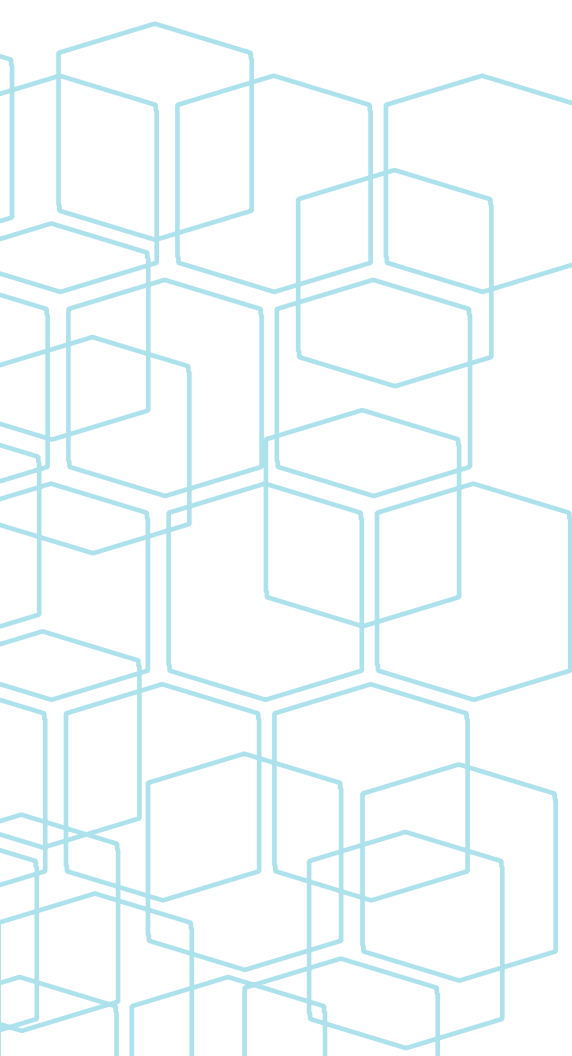
PARK 6

- icebreaker, lunch and coffee



K.F. HEIN FOYER

- vendor exposition
- Carbon Portal booth
- ethical guidelines stand



POSTER SESSIONS

13 TUESDAY

13:00-
14:00

LUNCH POSTER SESSION 1 | HERTZ, 7th floor

Drivers of GHG fluxes from productive and managed peatlands: measurements, modelling and mitigation

LUNCH POSTER SESSION 2 | CLOUD 9, 9th floor

Utilizing eddy covariance flux networks for improved understanding of carbon-water relationships at multiple spatial and temporal scales

LUNCH POSTER SESSION 3 | CLUB 9, 9th floor

New developments in mapping regional CO₂ fluxes

17:30-
19:00

POSTER SESSION 4 | CLOUD 9, 9th floor

- Emission modelling and atmospheric monitoring of anthropogenic carbon emissions
- Ground-based remote sensing measurements of greenhouse gases and their application for carbon cycle studies, satellite and model validation and building MVS capacity

POSTER SESSION 5 | CLUB 9, 9th floor

- Abrupt changes in greenhouse gas fluxes in response to extremes: learning from observations to improve future projections
- Effect of winter 2020 anthropogenic and climate anomalies on terrestrial, atmosphere, and ocean greenhouse gas exchange
- Carbon cycle in the Mediterranean region: from the local to the regional scale
- Better constraining the European blue carbon stock

14 WEDNESDAY

13:30-
14:30

LUNCH POSTER SESSION 6 | HERTZ, 7th floor

- Advances in nature-based negative emission technologies
- The role of radon gas as tracer of atmospheric processes, air mass origin and indirect retrieval of greenhouse gas emissions
- Using the ICOS stations for investigating fluxes of reactive gases and aerosols in terrestrial ecosystems

LUNCH POSTER SESSION 7 | CLOUD 9, 9th floor

Emission modelling and atmospheric monitoring of anthropogenic carbon emissions

LUNCH POSTER SESSION 8 | CLUB 9, 9th floor

- The value chain of (surface) ocean CO₂ measurements
- New developments in estimates of the ocean sink for CO₂

18:00-
19:30

POSTER SESSION 9 | CLOUD 9, 9th floor

- Enhancing the use of greenhouse gas observation systems to inform, enable and frame policy
- Community Engagement, Training and Outreach
- Towards operational monitoring of greenhouse gas emissions - the combination of satellite and in-situ data in an integrated system approach

POSTER SESSION 10 | CLUB 9, 9th floor

- GHG Fluxes at ecosystem level: Soil and Woody-tissue
- Informing transformative change towards a sustainable future using integrated environmental research infrastructures
- Stability of carbon pools following changes in climate and management in organic soils





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