CarboNetwork All the news and opportunities from the Italian scientific community working on the Carbon Cycle

October 2021

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Dear All,

Welcome to the third issue of CarboNetwork, the newsletter of the Italian Carbon Network! We are happy to have this newsletter in this moment of postpandemic activities. There are many news, many new opportunities to work together, new calls for Italian and European grants as well as new exciting appointments that bring us back to in person Science, the one we like. COP26 as well as the new IPCC report reminds us of the climate crisis due to CO2 cycle alterations. Now more than ever our interdisciplinary research can make a significant contribution to the sustainable development of our society.

For this reason, our network has to grow and we have a number of challenges to face together. We need to make this newsletter and the network more inclusive and representative of all the disciplines involved in the study of Carbon. Please share this newsletter with all your networks and with students, researchers, journalists, and stakeholders that might find it interesting or useful. If this is the first time you receive the CarboNetwork newsletter, remember to Subscribe. Instructions on how to do it are at the bottom of the newsletter.

Also, do not forget to contribute to any of the sections of the next newsletter scheduled for February 15, 2022. You can submit your contributions using the online form at the address <u>https://forms.gle/fvEwWUYKrUQjhUicA</u>. Contributions arriving after the 1st of February will automatically go to the next newsletter.

Finally, we want to thank you for your support and the contributions we have received so far.

Best, CNR GdL Ciclo del Carbonio

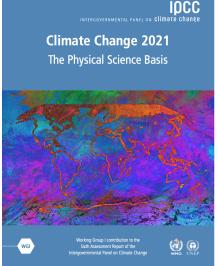
News

International Workshop C4 "Climate Change and Carbon Cycle" (June 22-24, 2022, CNR Research Area Pisa, Italy) - First announcement



The Working Groups "Paleoclimate Dynamics" and "Carbon Cycle" of the Department of Earth System Sciences and Environmental Technologies of the Italian National Research Council (DSSTTA-CNR) announce the International Workshop C4 "Climate Change and Carbon Cycle" (June 22-24, 2022, CNR Research Area Pisa, Italy). The C4 Workshop has been designed around three interdisciplinary scientific sessions Processes – Impacts – Frontiers and three interactive laboratories, to stimulate knowledge exchange within the scientific communities interested in Global Changes, Climate System and Carbon Cycle through time. Registrations will be open from Nov 15 and abstract submission from Nov 28. Save the dates and visit the workshop website https://dta.cnr.it/climate-change-and-carbon-cycle/ !

AR6 Climate Change 2021: The Physical Science Basis



The first part of the Sixth Assessment Report of the IPCC is out. A total of 234 scientists from 66 countries contributed to this first of three working group reports that is the most up-to-date physical understanding of the climate system and climate change. For more information: <u>https://www.ipcc.ch/report/sixth-assessment-report-working-group-i/</u>

Societá Geologica Italiana (SGI): Webinar series 2021 on Geobiology



The Societá Geologica Italiana, in collaboration with the University of Naples Federico II and the University of Bologna Alma Mater has organized a series of seminars revolving around the theme of Geobiology to be held online on the 4th, 11th, 18th, 25th of November and 2nd December at 6 pm Italian time to discuss emerging topics in Geobiology. The invited speakers feature Karen Lloyd (University of Tennessee, USA), <u>Ariel Anbar</u> (Arizona State University, USA), <u>Paul Falkowski</u> (Rutgers University, USA), <u>Donato Giovannelli</u> (University of Naples Federico II, Italy) and <u>Robert Hazen</u> (Carnegie Science, USA). All the talks will be streamed online on the YouTube channel of the Societa Geologica Italiana: https://www.youtube.com/channel/UC_fleXTUYBYaF2_4uRm37g/feedu

The Marcus Wallenberg Prize 2020



Nicholas Coops, Joseph Landsberg, and Richard Waring have won the 2020 edition of the Marcus Wallenberg International Award for developing a mathematical model to predict forest growth in a changing climate. In the video for the award ceremony, J. Landsberg, confirming their hypothesis, cites Collalti and Prentice research which indicates "the existence of pervasive acclimation mechanisms that tend to stabilize forest productivity, plant respiration, and photosynthesis". For more information: <u>https://vimeo.com/599426715/3e3f88c6de</u>; <u>https://mwp.org/model-for-forest-growth-during-climate-change/</u>. Collalti A. & Prentice IC, "Is NPP proportional to GPP? Waring's hypothesis twenty years on." Tree Physiology, 39 (8): 1473-1483, https: // doi.org/10.1093/treephys/tpz034, 2019)



Horizon Europe calls for proposals with deadlines in 2022 and beyond, applying public bodies, research organisations and higher education institutions, from EU Member States and associated countries, must have a GEP or equivalent strategy in place to be eligible for funding. Gender equality benefits research and innovation (R&I) by improving the quality and relevance of R&I, attracting and retaining more talent, and ensuring that everyone can maximise their potential. For more information: https://bit.ly/3mVOYyc

International Geodiversity Day - October 6, 2022



For the first time in April 2021, UNESCO approved establishing the International Day of Geodiversity. Geodiversity includes all non-living parts of nature: minerals, rocks, fossils, soils, sediments, soil forms, as well as the geological and morphogenetic processes that occur on Earth and the hydrological elements that characterize it, such as rivers and lakes. For more information: <u>https://www.geodiversityday.org</u> (photos: Donato Giovannelli, UNINA).

Master program "Sustainable Development and Climate change" (2022, Univ. of Pisa)



Registrations are open for the 2nd Level online Master program "Sustainable Development and Climate change", an interdisciplinary specialization course organized by the University of Pisa (e-learning, official language: Italian). MSc graduates should apply until December 15th. Please visit <u>https://www.agr.unipi.it/master-in-sviluppo-sostenibile-e-cambiamento-climatico/</u>. Contact: <u>mastersscc@agr.unipi.it</u>.

Newsworthy articles

- H. Damon Matthews, Katarzyna B. Tokarska, Zebedee R. J. Nicholls, Joeri Rogelj, Josep G. Canadell, Pierre Friedlingstein, Thomas L. Frölicher, Piers M. Forster, Nathan P. Gillett, Tatiana Ilyina, Robert B. Jackson, Chris D. Jones, Charles Koven, Reto Knutti, Andrew H. MacDougall, Malte Meinshausen, Nadine Mengis, Roland Séférian, and Kirsten Zickfeld (2020). Opportunities and challenges in using remaining carbon budgets to guide climate policy. Nature Climate Change, DOI:10.1038/s41561-020-00663-3. <u>https://www.nature.com/articles/s41561-020-00663-3</u> A critical explanation of the "remaining carbon budget" with indications of major uncertainties, knowledge limitations and implications for climate policies.
- Stefano Fazi, Stefano Amalfitano, Stefania Venturi, Nic Pacini, Eusebi Vazquez, Lydia A. Olaka, Franco Tassi, Simona Crognale, Peter Herzsprung, Oliver J. Lechtenfeld, Jacopo Cabassi, Francesco Capecchiacci, Simona Rossetti, Michail M. Yakimov, Orlando Vaselli, David M. Harper & Andrea Butturini (2021). High concentrations of dissolved biogenic methane associated with cyanobacterial blooms in East African lake surface water. Communication Biology 4, 845 (2021). DOI: <u>https://doi.org/10.1038/s42003-021-02365-x</u>.
- High concentrations of dissolved biogenic methane associated with cyanobacterial blooms in East African lake surface water.
 Xu, X., Sharma, P., Shu, S. et al. Global greenhouse gas emissions from animal-based foods are twice those of plant-based foods. Nat Food 2, 724–732 (2021). DOI: https://doi.org/10.1038/s43016-021-00358-x.
 Using a model-data integration approach, this paper provides spatially explicit estimates of production- and consumption-based GHG emissions worldwide from plant- and animal-based human food. To be read to have an updated picture of the share of human food production and consumption to the global GHG emissions and to know more about the way these estimates are calculated.

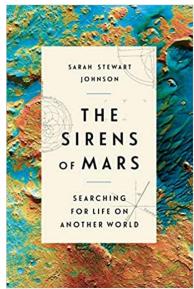
- Ying Cui et al, Massive and rapid predominantly volcanic CO2 emission during the end-Permian mass extinction, PNAS September 14, 2021. DOI: doi.org/10.1073/pnas.2014701118.
- A new study by Cui and colleagues, published in PNAS, shows how a massive and rapid increase in CO2 caused by volcanism may have influenced the climate and marine and terrestrial ecosystems 252 million years ago.
 Dittmar, T., Lennartz, S.T., Buck-Wiese, H., Hansell, D.A., Santinelli, C., Vanni, C., Blasius, B., Hehemann, J.-H., 2021. Enigmatic persistence of
- Dittmar, T., Lennartz, S.T., Buck-Wiese, H., Hansell, D.A., Santinelli, C., Vanni, C., Blasius, B., Hehemann, J.-H., 2021. Enigmatic persistence of dissolved organic matter in the ocean. Nat. Rev. Earth Environ. 2021 28 2, 570–583. DOI: <u>https://doi.org/10.1038/s43017-021-00183-7</u>.
 Marine dissolved organic matter (DOM) contains more carbon than the combined stocks of Earth's biota. For unknown reasons, a residual fraction of DOM persists in the oceans for millennia. In this Perspective, we discuss and compare two concepts that could explain this persistence.
- Farsang, S., Louvel, M., Zhao, C. et al. Deep carbon cycle constrained by carbonate solubility. Nat Commun 12, 4311 (2021). DOI: <u>https://doi.org/10.1038/s41467-021-24533-7</u>.
 Earth's deep carbon cycle affects atmospheric CO2, climate, and habitability. Farsang and coauthors present new evidence about carbonate solubility and carbon release over a range of slab settings.

Hot off the press

- G. Boldrocchi, D. Spanu, M. Mazzoni, M. Omar, I. Baneschi, C. Boschi, L. Zinzula, R. Bettinetti, D. Monticelli. Bioaccumulation and biomagnification in elasmobranchs: A concurrent assessment of trophic transfer of trace elements in 12 species from the Indian Ocean. Marine Pollution Bulletin, Volume 172, 2021, 112853; DOI: <u>https://doi.org/10.1016/j.marpolbul.2021.112853</u>.
- Dr. Susan Hartman, Dr. Rachel Jeffreys, Dr. Morten Iversen, Dr. Jennifer Durden, Dr. Steph Henson, Dr. Brian Bett. Last update 7 July 2021. The Porcupine Abyssal Plain sustained observatory (PAP-SO) in the North East Atlantic - Special Issue. <u>https://www.sciencedirect.com/journal/progress-inoceanography/special-issue/10HV204DT1N</u>.
- Haesen, S., Lembrechts, J. J., De Frenne, P., Lenoir, J., Aalto, J., Ashcroft, M. B., Kopecký, M., Luoto, M., Maclean, I., Nijs, I., Niittynen, P., van den Hoogen, J., Arriga, N., Brůna, J., Buchmann, N., Čiliak, M., Collalti, A., De Lombaerde, E., Descombes, P., ... Van Meerbeek, K. (2021). ForestTemp – Sub-canopy microclimate temperatures of European forests. Global Change Biology, 00, 1– 13. DOI: <u>https://doi.org/10.1111/gcb.15892</u>.
- Zampieri, Matteo, et al. "Rise and fall of vegetation annual primary production resilience to climate variability projected by a large ensemble of Earth System Models' simulations." Environmental Research Letters 16.10 (2021): 105001. <u>https://iopscience.iop.org/article/10.1088/1748-9326/ac2407?</u> <u>fbclid=lwAR1MbNZOJDpg3gtHJ4KP254u2vyVVH-3PGIEjah7VnEGTNzaU7R60yPLjoc</u>.
- Tanhua, T., Lauvset, S.K., Lange, N. et al. (2021). A vision for FAIR ocean data products. Commun Earth Environ 2, 136 (2021). DOI: https://doi.org/10.1038/s43247-021-00209-4.
- Santinelli, C., Iacono, R., Napolitano, E., Ribera d'Alcalá, M., 2021. Surface transport of DOC acts as a trophic link among Mediterranean sub-basins. Deep Sea Research I 170, 1–18. DOI: <u>https://doi.org/10.5194/bg-2018-418</u>.
- Dal Corso J., Bernardi M., Yadong Sun, Haijun Song, Seyfullah L.J., Preto N., Gianolla P., Ruffell A., Kustatscher E., Roghi G., Merico A., Hohn S., Schmidt A.R., Marzoli A., Newton R.J., Wignall P.B. e Benton M.J. (2020). Extinction and dawn of the modern world in the Carnian (Late Triassic). Sci Adv 6 (38). DOI: 10.1126/sciadv.aba0099.

Our Book Suggestion

"The Sirens on Mars" by Sarah Stewart Johnson



This book takes the reader away from our Blue Planet towards Mars searching for signs of life over the Red Planet. Sarah Stewart Johnson not only provides a fascinating story of the Mars space exploration, but also a guide on the basic constitutes of life and how scientists take advantage of studies on Earth (including the ecology, the paleo-biology, the geology and the Earth observation techniques) to find fingerprints of life (past or present) on Mars, setting the basis for a new scientific field (the exobiology). Reading the book, the reader can realize that the story of Mars is also a story about Earth and that in a remote past the two Planets were likely to be "blue" twins. "The Sirens of Mars (2021), Searching for life on another word" By Sarah Stewart Johnson. ISBN 9781101904831. https://www.penguinrandomhouse.com/books/529592/the-sirens-of-mars-by-sarah-stewart-johnson/

Upcoming Events



13–17 December 2021 AGU Fall Meeting is the primary gathering for Earth and space scientists and students, at New Orleans and Online Everywhere. 13 - 17 December 2021. For info: https://www.aqu.org/Fall-Meeting.



The PAGES Carbon in Peat on EArth through Time (C-PEAT) working group will hold a joint workshop with INQUA, titled "Tropical peatland processes and ecosystem services" sometime in late 2021 in Bangkok, Thailand, or potentially even in 2022. This workshop was originally planned for 13-17 May 2020, then March 2021, but because of continuing COVID-19 disruptions and restrictions, the group leaders are closely monitoring the chances of an in-person meeting being even possible in 2021. The dates have not been finalized. The correct dates will be announced as soon as possible. For info: https://pastglobalchanges.org/calendar/26988



Carbon Isotopes in the Ocean: Ensuring High-Quality Results Workshop will be held virtually on 1-3, November 2021 (NEW DATES). Isotopic measurements of DIC are contributing to our understanding of biogeochemical and paleoceanographic processes. Until recently, only a few laboratories had the ability to make the precise isotope measurements necessary for studying ocean circulation and the uptake of anthropogenic carbon. At present, there are no recognized standards or reference materials for carbon isotopes in seawater. This new activity sponsored by OCB aims to define methods of best practice for the measurement of DI13C and DI14C with the goal of guaranteeing data comparability of all measurements across laboratories and over time. We will assemble researchers from laboratories making DI13C and/or DI14C measurements to discuss the different methods in use, recommend best practice protocols, and decide on the best source of reference materials. Read the full proposal : https://www.us-och.org/wp-content/uploads/sites/43/2021/08/McNichol.pdf

The OCB Project Office advertises, supports, and coordinates the annual **OCB summer science workshop**. The dates, theme(s), and thematic session chairs are chosen by the OCB-SSC with input from the broader OCB community. In addition to plenary sessions on timely state-of-the-art science, the OCB summer workshop provides a forum for community discussion of new research directions and opportunities. This meeting is always web-broadcasted to engage broader participation, and we field questions from webcast participants via an email address that is closely monitored throughout the workshop. The Project Office posts speakers' talks and webcast footage on the workshop website as soon as possible during or after the meeting. For info: https://www.us-ocb.org/summer-workshop



International Permafrost Association Conferences 2021-2023. The IPA is pleased to announce the revised conference plans for the years 2021-2023: 2021 Regional Conference on Permafrost and 19th International Conference on Cold Regions Engineering, 11-16 July 2021, Boulder, Colorado, USA; 12th International Conference on Permafrost (ICOP 2022), 20-24 June 2022, Lanzhou, China;

2023 Regional Conference on Permafrost (EUCOP6), Puigcerdà, Spain (exact dates TBD).

This new plan was developed to ensure the best possible conferences and a balance in regional distribution of conference locations. The IPA extends sincere gratitude and thanks to the local organizing committees for their flexibility and the significant work undertaken in planning these conferences. The IPA looks forward to these conferences and hopes to see a strong showing of the permafrost community in these exciting locations.



The Scottish Blue Carbon Forum, in collaboration with Marine Scotland (Scottish Government) and the University of St Andrews, are pleased to announce a **two-day Blue Carbon Conference to coincide with COP26** (United Nations international climate negotiations), being hosted by the UK in Glasgow from 1-12 November 2021. The Conference will gather an international audience (including COP26 delegates) to participate in a series of plenary sessions and workshops, addressing scientific and policy-facing issues, to address Blue Carbon developments in the context of the Global Climate Emergency. For info: <u>https://www.bluecarbon.scot/blue-carbon-conference</u>



The next **ICOS Science Conference** will be held on 13-15th September, 2022, in Utrecht, the Netherlands. The call for session and side event proposals is now open at https://www.icos-cp.eu/event/1078. The deadline for suggestion submission is 25th of October, 2021.



Abstract submission is open till 31 October 2021 for SISEF XIII congress "from New Green Deal to Farm to Fork Strategy" which will be held in Orvieto, 20-22 February 2022. For more information: <u>https://congressi.sisef.org/xiii-congresso/</u>



La Winter School organizzata da SISEF "A forest science atelier- From data to information, from information to scientific publishing", in collaborazione con il CREA, l'Università degli Studi della Tuscia, l'Università degli Studi di Firenze, il CNR e l'Accademia Italiana di Scienze Forestali di Firenze si terrà presso il Centro Studi Alpino (CSALP) – PIEVE TESINO dal 10 al 14 Gennaio 2022. Indirizzata a studenti di dottorato e ricercatori ad inizio carriera, la Winter School sarà incentrata su tematiche/tecniche particolarmente rilevanti nel settore forestale. Per maggiori info: https://sisef.org/2021/09/27/a-forest-science-atelier-winter-school/



Il Climate Change come problema Scientifico, 28 ottobre 2021, Università La Sapienza, Roma (hybrid mode). Interesting seminars on climate change, uncertainty, error, and predictability in climate science. For more information: <u>https://www.phys.uniroma1.it/fisica/en/archivionotizie/il-climate-change-come-problema-scientifico</u>.

Funding Opportunities

Incoming H2020 call



The call Climate sciences and responses (HORIZON-CL5-2022-D1-02) is going to open within **Horizon Europe Framework Programme (HORIZON)** with a focus on ecosystems natural capacity in carbon sequestration and biodiversity conservation. Planned opening date: 12 October 2021; Deadline date: 10 February 2022. More details on: <u>https://docs.google.com/forms/d/e/1FAIpQLScKIJpdL2sCTatujzp4Fnh4l3MRyRLfKFs7gYfIIEaFu1Su3w/viewform</u>

Call for two awards for PhD thesis in the forestry sector



The National Union for Forestry Scientific Innovation, UNIF, in collaboration with the Italian Academy of Forest Sciences, announces awards amounting to Euro 500 reserved for two PhD who have discussed their PhD thesis in the period 2019 - 2021 in dedicated themes. Deadline is 31 October 2021. For more details: https://aisf.it/2021/09/06/bando-per-due-premi-per-tesi-di-dottorato-nel-settore-forestale-scadenza-31-ottobre-2021/

ERC Work Program 2022. Calls are OPEN for the ERC Starting Grant 2022!



The fundamental activity of the **ERC research Grant** is to provide attractive, long-term funding to support excellent investigators and their research teams to pursue ground- breaking, high-gain/high-risk research. For more information: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/wp-call/2022/wp-horizon-erc-2022 en.pdf

"Bando FIS" - Call for proposal financed by the Italian Science Fund



The MUR has released the call for proposal "Bando FIS" – Competitive procedure supporting fundamental research activities financed by the Italian Science Fund. The eligible Principal Investigators may submit project proposals in all the scientific fields eligible for ERC funding, according to the funding schemes "Starting Grant" or "Advanced Grant". The submission process opens on Oct 26, 12:00 CET +1, and closes on Dec 27, 12:00 CET +1. To download the call and submit your application, please visit the institutional website https://www.gea.mur.gov.it/Bandi/Fis

Employment Opportunities

Full-time laboratory manager. The Molecular Paleoclimatology and Organic Biogeochemistry Laboratory at the University of Notre Dame is seeking a new full-time laboratory manager. For more information: <u>https://jobs.nd.edu/postings/21987</u>

REACT-EU funded PON PhD and RTDa positions. A large number of new PhD and RTDa positions have become available at all major Italian Universities following the new PON EU REACT funding arrived in late august and part of the investments for the crisis response to coronavirus. The majority of the deadlines for these positions is before the end of October 2021. Information can be found directly on the website of each University.

Assistant Professor. Two open positions in Biology at the University of Utah. Details at https://utah.peopleadmin.com/postings/121590

The **Department of Geosciences at Princeton University** is seeking applications for a **tenure-track assistant professor** faculty position in geology, broadly defined. Possible fields of specialty include, but are not limited to, petrology, geochemistry, volcanology, tectonics, glaciology, geomorphology, sedimentology, Earth history, and paleontology. We are particularly interested in interdisciplinary scientists who could interact productively with existing faculty across the department. For more information <u>https://puwebp.princeton.edu/AcadHire/apply/application.xhtml?listingId=22541</u>

Doctoral candidate on nitrogen and carbon cycling - Leibniz Centre for Tropical Marine Research. Deadline November 30th, 2021 <u>https://www.leibniz-zmt.</u> de/en/vacancies/doctoral-candidate-f-m-d-wg-systems-ecology-eng.html

2022 NOAA Climate & Global Change Postdoctoral Fellowship Program. Deadline January 7, 2022. Details at https://cpaess.ucar.edu/cgc/how-postdoctorates-apply

We are looking for **a postdoctoral fellow** for our Isotope Mass Spectrometry laboratory who will be involved in setting up measurement techniques of stable isotope composition of Carbon, Nitrogen, Hydrogen and Oxygen in solid, liquid and gaseous environmental matrices. Deadline for submitting the application is October 19, for more information visit **CNR URP** website: <u>https://www.urp.cnr.it/</u>

A 3-year position for a Researcher (RTDA in the Italian system) is available at the Department of Maths and Physics (Università della Campania "Luigi Vanvitelli", Caserta). The project title is "Verification of fossil CO2 emission from waste incinerators" through measurements of 14CO2. However, the project is part of a plan to develop 14C-CO2 measurements on air samples at ambient CO2 concentration. The appointed Researcher will have to teach courses of Physics. The call is available at the following link: https://www.unicampania.it/index.php/personale/docenti-e-ricercatori/concorsi/procedure-selettive-finalizzate-alla-stipula-di-contratti-di-ricercatore-a-tempo-determinato. Deadline for application: 28th October. Anyone interested contact: <a href="mailto:ma

Useful links

- ICOS https://www.icos-cp.eu/r
- DCO https://deepcarbon.net/
- IPCC https://www.ipcc.ch
- IODP http://www.iodp.org
- SOLAS http://ww.solas-int.org
- Critical Zone Observatory NSF https://www.czen.org

Visit the webpage https://dta.cnr.it/ciclo-del-carbonio. You'll find all previous issues of the CarboNetwork newsletter.

For comments and suggestions, or simply to get in touch write to carbonetwork@cnr.it

Contribute to the NEWSLETTER CarboNetwork

The NEWSLETTER CarboNetwork is released every four months, on February 15th, June 15th, and October 15th. Please send your contribution to the next newsletter anytime before the release by uploading your contribution on the online form at the address <u>https://forms.gle/fvEwWUYKrUQjhUicA</u>. Contributions arriving after the 1st day of the release month will automatically go to the next newsletter.

Our Goodbye

"The researcher's profession must return to its tradition of seeking for the love of discovering new truths." — Enrico Fermi



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