

# C<sup>4</sup> WORKSHOP CLIMATE CHANGE AND CARBON CYCLE

Global Change from the Deep Past to the Anthropocene

**June 22-24, 2022**

CNR Research Area  
Pisa, Italy



The International Workshop C<sup>4</sup> “Climate Change and Carbon Cycle” aims to foster knowledge and cross-disciplinary exchange within the scientific communities interested in Global Change, the Climate System, and the Carbon Cycle through time.

The workshop welcomes contributions on reconstructions, observations and modelling from the geosphere, atmosphere, oceans, and ecosystems, aimed to provide insights into how climate change affects the ways that carbon moves through Earth's environment from the deep past to the modern era, and how carbon cycle interacts with climate and environmental systems.

The workshop will be structured around **three highly interdisciplinary scientific sessions**. Each session integrates different scientific perspectives and encompasses a wide temporal range, from the million-year scale of geological processes, through the thousand-year scale of the orbitally-driven and sub-orbital climate changes of the Quaternary, to the yearly (and sub-yearly) scale of modern monitoring and observations.

**Processes:** This session aims to provide a better understanding of how linear and non-linear feedbacks within the carbon cycle operate to modulate climate. We welcome contributions on fundamental processes affecting different compartments of the climate system through time.

**Impacts:** This session seeks to analyse the expression of global changes linked to climate and the carbon cycle on different components of the Earth System across multiple time scales, utilizing multi-disciplinary approaches.

**Frontiers:** This session aims to explore the frontiers in analytical and scientific research on carbon cycle-climate system dynamics, to identify common/trans-scale knowledge gaps, and to stimulate discussion on how an integrated approach can push research boundaries.

Scientific knowledge exchange will also be fostered through **3 interactive cross-disciplinary laboratories:**

- «Observation and Prediction: two sides of the same coin»
- «Discovering the Deep»
- «Walking through the Earth System»

The workshop will be limited to **150 people** for logistic reasons, so we encourage registering early

**REGISTRATION AND  
ABSTRACT SUBMISSION:**  
from December 13<sup>th</sup> 2021 to  
February 28<sup>th</sup> 2022

<https://dta.cnr.it/climate-change-and-carbon-cycle/>

The C<sup>4</sup> Workshop is promoted and organized by the Working Groups “Paleoclimate dynamics” and “Carbon Cycle” of the National Research Council of Italy.