



Monday 27 April 2026

4.30 pm (Rome time) - Aula Ruffini, Dip. Scienze della Terra, Torino
Or [via webex at this LINK](#)



Understanding geogenic CO₂ emissions from carbonate deposits: the impact of local factors at global scale

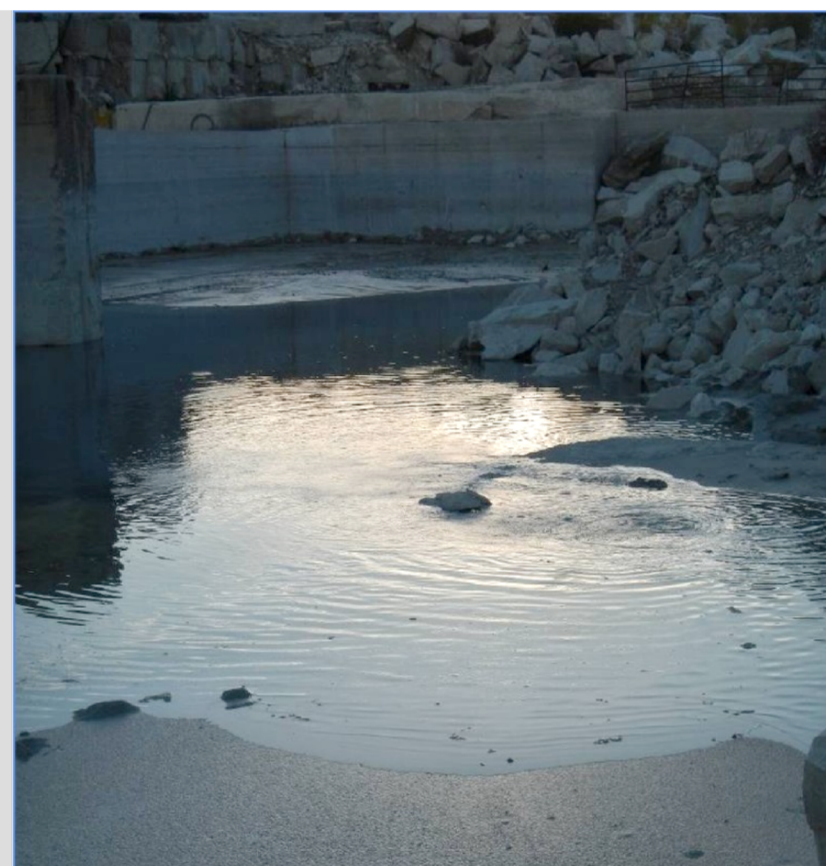
Alessandro Mancini

Dipartimento di Scienze della Terra, Università di Roma Sapienza



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The Intergovernmental Panel on Climate Change highlights the significant human influence on global climate change, while geogenic CO₂ emissions remain important. Volcanic emissions are relatively well quantified, but other natural sources—such as carbonate precipitation in methane seeps, fault zones, hydrothermal systems, and mantle degassing—may release comparable amounts of CO₂. However, data on diffuse geogenic degassing are limited and regionally scattered. Carbonate deposits are often used as record of environmental and climatic changes. In this presentation we will see how some Miocene and Pleistocene deposits in Central Italy, related to different environments and different local geological factor, can be used as a tool to understand the natural CO₂ emissions and their contribution to the global carbon cycle. Natural CO₂ emissions beyond volcanoes may be equally significant but remain poorly quantified. Studying carbonate deposits remains an essential tool to understand diffuse degassing and accurately assess its role in the global carbon cycle.



The Speaker

Alessandro Mancini was a post-Doc in 2025 at the Department of Earth Sciences of Sapienza University of Rome, working on a project focused on the study of methanogenic carbonate deposits of the Majella area. His research adopts a multidisciplinary approach combining basin analysis, field geologist, 3D modelling, and geochemistry to investigate climate change recorded in marine and continental carbonate systems and the role of geogenic CO₂ in the global carbon cycle. He worked in different geological settings, from Pyrenees and Alpine successions to Central Italy basins, integrating sedimentology, stratigraphy, and isotopic analyses.

