Zickfeld, Kirsten; et al. (2021): Asymmetry in the climate–carbon cycle response to positive and negative CO2 emissions

"It is commonly assumed that the climate–carbon cycle response to a negative CO\textsubscript{2} emission is equal in magnitude and opposite in sign to the response to an equivalent positive CO\textsubscript{2} emission. Here we test the hypothesis that this response is symmetric by forcing an Earth system model with positive and negative CO\textsubscript{2} emission pulses of varying magnitude and applied from different climate states."

Read more » Zickfeld, Kirsten; et al. (2021): Asymmetry in the climate–carbon cycle response to positive and negative CO\textsubscript{2} emissions
Belmonte, Beatriz A.; et al. (2021): A fuzzy optimization model for planning integrated terrestrial carbon management networks

"Although recent papers have reported the development of process integration models for optimizing carbon management networks based on either biochar application or enhanced weathering, none have reported models integrating these two NETs in the same system. To address this gap, a fuzzy mixed-integer linear programming model is developed that integrates biochar application and enhanced weathering for large-scale carbon sequestration."

Read more » Belmonte, Beatriz A.; et al. (2021): A fuzzy optimization model for planning integrated terrestrial carbon management networks
Tan, Raymond R.; et al. (2021): Pinch-based planning of terrestrial carbon management networks


"In this work, a pinch analysis approach for the planning of CMNs based on either enhanced weathering or biochar application is developed."

LINK

Read more » Tan, Raymond R.; et al. (2021): Pinch-based planning of terrestrial carbon management networks

31.05.2021

# New Publications

0 Comments
Fuhrman, Jay; et al. (2021): The role of negative emissions in meeting China’s 2060 carbon neutrality goal

"We use the Global Change Analysis Model to simulate how negative emissions technologies, in general, and direct air capture (DAC) in particular, could contribute to China’s meeting this target."

[Read more » Fuhrman, Jay; et al. (2021): The role of negative emissions in meeting China’s 2060 carbon neutrality goal](#)

"This Perspective therefore calls for governance frameworks for carbon dioxide removal to adjudicate between conflicting approaches to achieving negative emissions not only on the basis of technical efficiency, or even ‘on-the-ground’ social and environmental impacts, but also according to compatibility with socially legitimate visions and understandings of what energy – and more specifically energy use – should ultimately be for in the post-fossil fuel era."


17.05.2021

# Calls & events

0 Comments

Job: Postdoctoral Associate (Stony Brook University)
Deadline: 19. June 2021

"Seeking a postdoc familiar with the marine carbonate system for an interdisciplinary project in the emerging field of ocean carbon dioxide removal (ocean CDR) and negative emissions technologies (NETs) that aims to mitigate ocean acidification while decreasing the atmospheric carbon dioxide concentration. The postdoc will help evaluate an electrochemical process that enables local adjustment and control of seawater carbonate chemistry."

LINK

Read more » Job: Postdoctoral Associate (Stony Brook University)

06.05.2021

# New Publications

0 Comments

Lenzi, Dominic (2021): On the Permissibility (Or Otherwise) of Negative Emissions


"While NETs are not risk-free, I argue that they could be part of minimally just responses to climate change. In doing so, I identify a dilemma between limiting warming to 1.5 °C, which promises lower
climate impacts but implies greater NETs risks, and 2°C, which requires less NETs but promises greater climate impacts. Finally, I consider what the case of NETs reveals about permissibility in the face of non-compliance with principles of climate justice.

[Read more » Lenzi, Dominic (2021): On the Permissibility (Or Otherwise) of Negative Emissions]

06.05.2021

# New Publications

0 Comments

Beal, Colin M.; King, Carey W. (2021): The zero-emissions cost of energy: a policy concept

"We present a new carbon tax policy concept in which energy users would be taxed an amount equal to the cost of cleaning up the emissions that they create, wherein the tax revenues would be used to operate negative emissions technologies."

[LINK]
Sovacool, Benjamin K. (2021): Reckless or righteous? Reviewing the sociotechnical benefits and risks of climate change geoengineering

"[T]his study reviews and summarizes a large number of geoengineering assessments published over the past decade to document prospective benefits, but also reveal potential risks. It aims to provide a comprehensive evidence base on GGR and SRM technologies that is rigorous, timely, and interdisciplinary."

LINK
Ming, Tingzhen; et al. (2021): A nature-based negative emissions technology able to remove atmospheric methane and other greenhouse gases

"As some anthropogenic emissions cannot be zero, to compensate them it will be necessary to remove GHGs from the atmosphere. Among possible methods, the Iron Salt Aerosol (ISA) offers new possibilities, including removal of methane and several other GHGs, as well as carbon dioxide."

LINK

Read more » Ming, Tingzhen; et al. (2021): A nature-based negative emissions technology able to remove atmospheric methane and other greenhouse gases