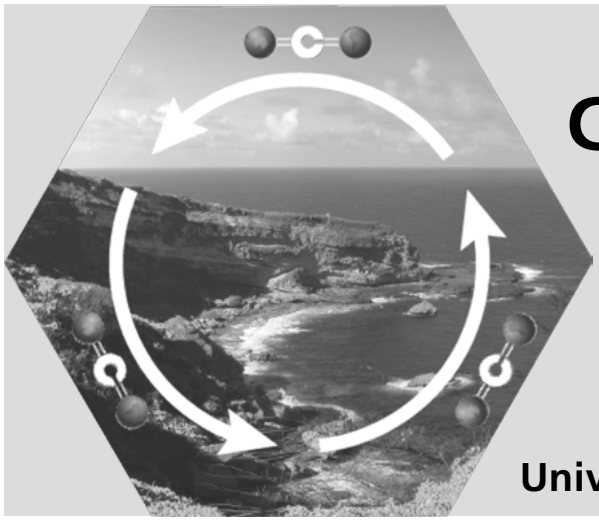
WCRP
World Climate Research Programme



Extending the **Climate-Carbon Cycle** Feedback Framework

25 – 27 April 2018

University of Bern, Switzerland

A core science objective of the WCRP Grand Challenge 'Carbon feedbacks in the climate system', is to advance our understanding of feedbacks between the climate and the carbon cycle. At the Grand Challenge kick-off workshop held in Hamburg in 2016, extension of the current carbon cycle feedback framework was identified as a topic that requires rapid action. This specifically refers to extending the existing carbon feedback framework (concentration-carbon response β, climate-carbon response γ), to recognize different timescales (especially for the ocean) and to reduce the scenario-dependence of the diagnosed feedback parameters. In addition, it was felt that an improved framework should go beyond global temperature as measure of feedback, for example including the water cycle, and also enabling more informative analysis of regional feedbacks.
This workshop will develop an extended carbon cycle feedback framework, and test this new framework against available CMIP5 simulations, and against CMIP6 simulations at a later stage. The outcome of the workshop will be the outline of a position paper on 'An extended climate-carbon cycle feedback framework to analyse Earth System Models projections'.

AGENDA

WEDNESDAY

12:30 Registration
13:00 Welcome
Thomas U Bern
13:15 Grand Challenge, Goals
Tatiana MPI-Meteorology
Pierre U Exeter
13:45 Deep dive 1
Land Feedbacks
Vivek Arora, Env. Canada
14:15 Deep dive 2
Ocean feedbacks
Ric Williams, U Liverpool
14:45 Discussion
15:00 Coffee break
15:30 Introduction to
Break Out Groups (BOGs)
15:45 Individual talks Session 1
'How to extend and
improve carbon cycle
feedback framework?'
18:00 Reception

THURSDAY

09:00 Deep dive 3
Feedbacks, Modeling
Reto Knutti, ETH Zürich
9:30 Individual Talks Session 2
'How to extend and
improve carbon cycle
feedback framework?'
10:30 Coffee break
11:00 BOGs: Session 1
‚What are strengths and
gaps of the existing CCC-
feedback framework?'
12:30 Lunch
14:00 BOGs: Session 2
‚How to extend the CCC-
feedback framework?'
‚How to link it to
the physical framework?'
15:30 Coffee break
16:00 BOGs: Session 3
‚How to extend the CCC-
feedback framework?'
‚How to link it to
the physical framework?'
17:30 Plenary: Report back
18:00 Dinner in the city

FRIDAY

09:00 BOGs: Session 4
10:30 Coffee break
11:00 Plenary
Synthesis and next steps
12:30 End of workshop

Hosts: **Thomas Frölicher**
Tatiana Ilyina
Pierre Friedlingstein

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