CONFESS

Consistent representation of temporal variations of boundary forcings in reanalyses and seasonal forecasts

Outreach and dissemination. Links to other international projects

CONFESS 1st General Assembly

Overview of activities

- ✓ Organization/chairship of EGU2021 session linked to CONFESS (19-30 April 2021)
- ✓ Submit renewal for the EGU session in 2022 (EGU2022; 3-8 April 2022)
- ✓ Engage with international community: submit session in 2022 open to Asian and Pacific community linked to CONFESS (AOGS 2022; 5-10 June 2022)
- ✓ Proposal for an international effort based on CONFESS and aimed at a broader coordinated multi-model experiment with the enhanced representation of land cover and vegetation (VEG-GLACE).
  - ➢ Submission of proposal for GEO Community Activity
  - ➢ Discussion and Proposal in the frame of GLASS-GEWEX

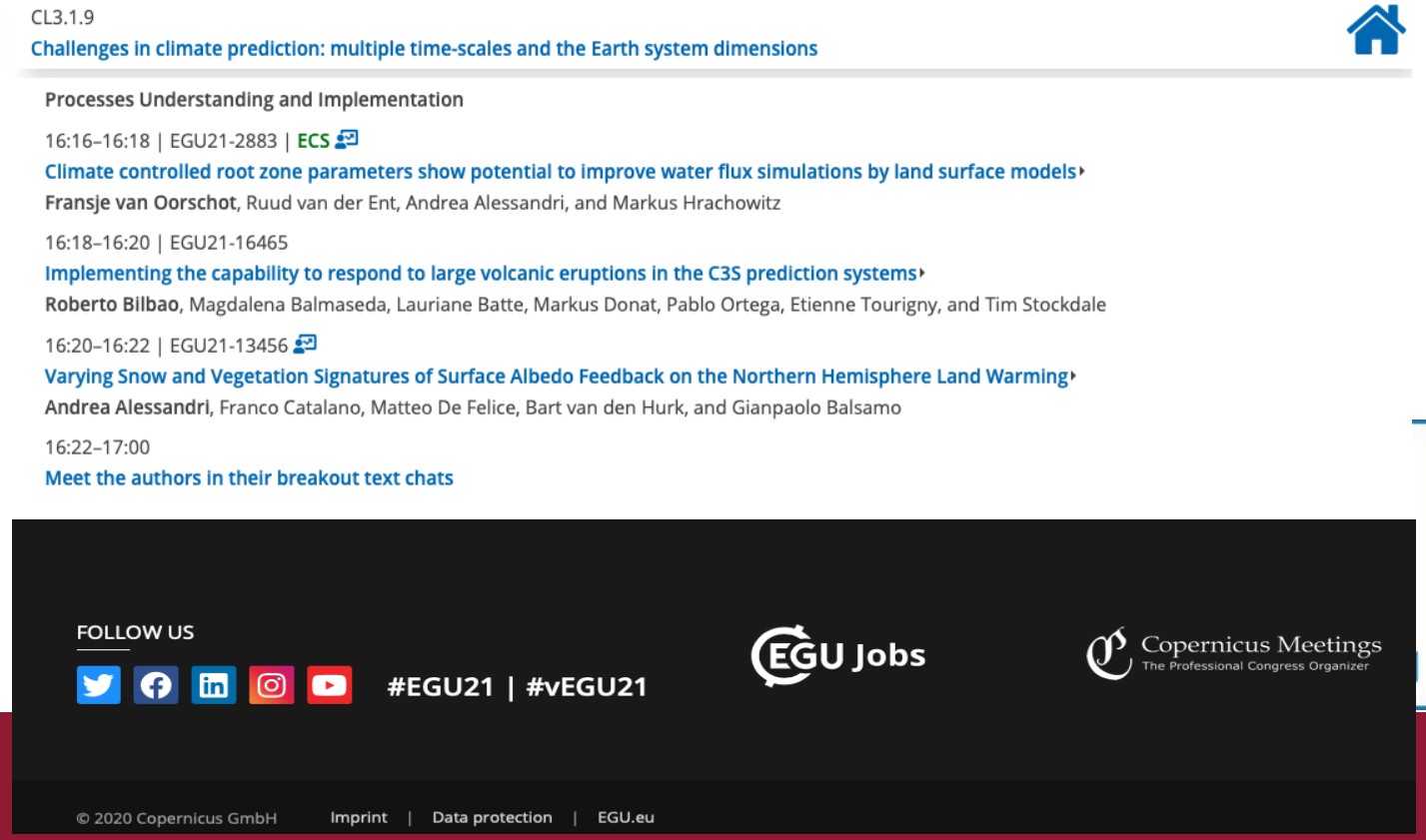
Organization/chairship of EGU2021 session linked to CONFESS (19-30 April 2021)

Challenges in climate prediction: multiple time-scales and the Earth system dimensions
Co-organized by BG2/CR7/HS13/NH1/NP5
Convener: Andrea Alessandri | Co-conveners: Yoshimitsu Chikamoto, Marlis Hofer[ECS], June-Yi Lee, Xiaosong Yang
22 vPICO presentations | Fri, 30 Apr, 15:30–17:00 (CEST)
https://meetingorganizer.copernicus.org/EGU21/session/40785#vPICO_presentations

-Sub-blocks on :
Decadal predictions – Subseasonal to Seasona
Implementation

3 Presentations directly related on CONFESS

Expected more presentations in 2022!


CL3.1.9
Challenges in climate prediction: multiple time-scales and the Earth system dimensions

Processes Understanding and Implementation

16:16–16:18 | EGU21-2883 | ECS
Climate controlled root zone parameters show potential to improve water flux simulations by land surface models
Fransje van Oorschot, Ruud van der Ent, Andrea Alessandri, and Markus Hrachowitz

16:18–16:20 | EGU21-16465
Implementing the capability to respond to large volcanic eruptions in the C3S prediction systems
Roberto Bilbao, Magdalena Balmaseda, Lauriane Batte, Markus Donat, Pablo Ortega, Etienne Tourigny, and Tim Stockdale

16:20–16:22 | EGU21-13456
Varying Snow and Vegetation Signatures of Surface Albedo Feedback on the Northern Hemisphere Land Warming
Andrea Alessandri, Franco Catalano, Matteo De Felice, Bart van den Hurk, and Gianpaolo Balsamo

16:22–17:00
Meet the authors in their breakout text chats

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Session re-submitted and accepted for the EGU session in 2022 (EGU2022; 3 to 8 of April 2022)

Challenges in climate prediction: multiple time-scales and the Earth system dimensions
Co-organized by BG9/CR7/NH10/NP5/OS1
Convener: Andrea Alessandri | Co-conveners: Yoshimitsu Chikamoto, Tatiana Ilyina, June-Yi Lee, Xiaosong Yang
https://meetingorganizer.copernicus.org/EGU22/session/42592

Last year 22 presentation with 3 directly related on CONFESS ” Processes Understanding and Implementation”

Expected more presentations in 2022!

deadline for submission: 12 January 2022, 13:00 CET

please advertise in your group
deadline for travel support: 1st December 2021
https://egu22.eu/about/roland_schlich_travel_support_and_virtual_registration_fee_waivers.html

Submit new session in 2022 open to Asian and Pacific community linked to CONFESS (AOGS2022; 5-6 June 2022)

AS23 - Earth System Predictability, Prediction and Projection

Convener: June-Yi Lee | Co-conveners: Andrea Alessandri, Yoshimitsu Chikamoto, Noel Keenlyside, and Jing-Jia Luo

https://meetmatt-svr.net/Public/Sessions?cfId=4#

deadline for submission: 10 January 2022

Proposal for an international effort based on CONFESS and aimed at a broader coordinated multi-model experiment with the enhanced representation of land cover and vegetation (GLACE-VEG).

Submitted to the GEO Secretariat; see at following link proposal under review :

https://cnrsc-my.sharepoint.com/:w:/g/personal/andrea_alessandri_cnr_it/EYyuTC_LNP9IvWqTKMo2IxoBdY--zLTK1zMGFSLPTCdZaw?e=w2XXG7

Note from GEO Secretariat: “we are approaching the launch of the process to develop the 2023-2025 GEO Work Programme (GWP)”

Proposal for a new GEO Community Activity – Work Programme 2020-2022

Global Land-Atmosphere Coupling Experiment - VEGetation (GLACE-VEG)

- The aim of this initiative is to exploit the latest available observations to improve the representation of land cover and vegetation variability in the land models used for climate predictions.
- Start a discussion about the modeling solutions to integrate novel observations and the design of coordinated multi-model experiments with the enhanced representation of land cover and vegetation.
- Evaluate the effects of the improved vegetation/land cover representation, starting from off-line land-only multi-model experiment.
- Move towards a robust quantification of the effects on the forecast performance and the benefit for end-users: design of a coordinated multi-model seasonal prediction experiment with the enhanced representation of land cover and vegetation.

Envisaged Multi-Model experimental framework

Building from already established efforts (e.g. SNOWGLACE, LS3MIP, ESM-snowMIP, LS4P, CONFESS) we'll involve the climate prediction community to discuss and embrace a substantial development of their land models to include realistic land cover and vegetation representation based on latest-generation satellite observations.

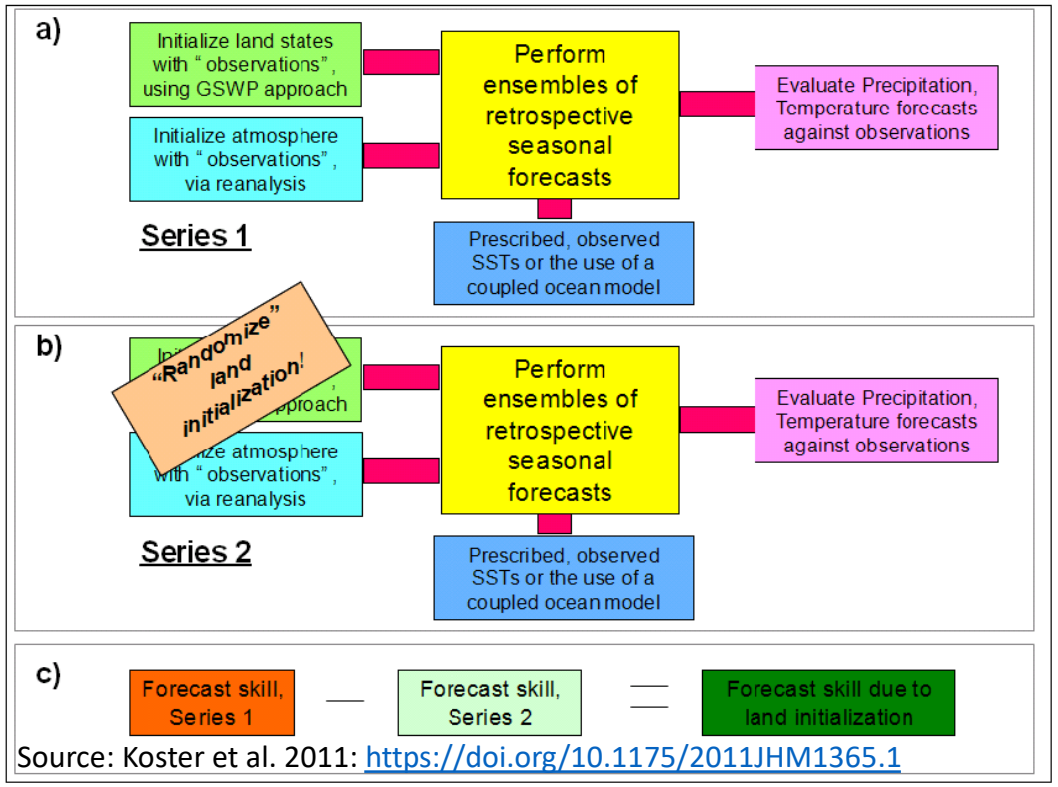
In second half of 2022, the climate prediction community will be engaged to organize a coordinated multi-model effort to have a robust quantification of the improvements in the seasonal predictions. To this aim, a discussion will be started about the common protocols for a coordinated seasonal prediction experiment.

Long memory biophysical states will be prescribed [or persisted] from available satellite observations and (optionally) initialized and dynamically simulated by the land models.
These prescribed states will include:
-Natural Vegetation density (Leaf Area Index)
-Interannual Land cover/Land use changes from historical reconstructions

GLACE-VEG: Discussion and Proposal in the frame of GLASS-GEWEX, which has welcomed the initiative and will push it within the community

VEG-GLACE to Quantify Vegetation Predictability

Stemming from the **GLACE2** experience & building on **EO Vegetation data** availability and the **CONFESS-EU** project https://cordis.europa.eu/project/id/101004156 . VEG-GLACE has desirable links with **GLACE-ESM** & **LS4P** initiatives



Source: Koster et al. 2011: https://doi.org/10.1175/2011JHM1365.1

Ideas:

- 2 Series of **Seasonal Forecasting** experiments with different Vegetation Initial-Conditions & time evolution
- **Multi-Model** participation (3-systems at present within the CONFESS project) to increase sampling & relevance
- Availability of EO processed data for **Land-Use** & **Vegetation** state from 1993 within Copernicus program

Ideas for a protocol

- 20+ years reforecasts (from 1993-onwards)
- Models spatial resolutions (1-deg or better)
- Forecast length (4-month FC or more)
- Forecast start dates (4-dates each year: Nov, Feb, May, Aug, minimum)
- Vegetation datasets (Land-Use yearly, LAI/FCOVER-Monthly)

Questions?

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