



Strengthening European Climate Research

Ralf Ludwig on behalf of the ECRA partners

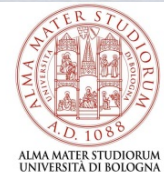
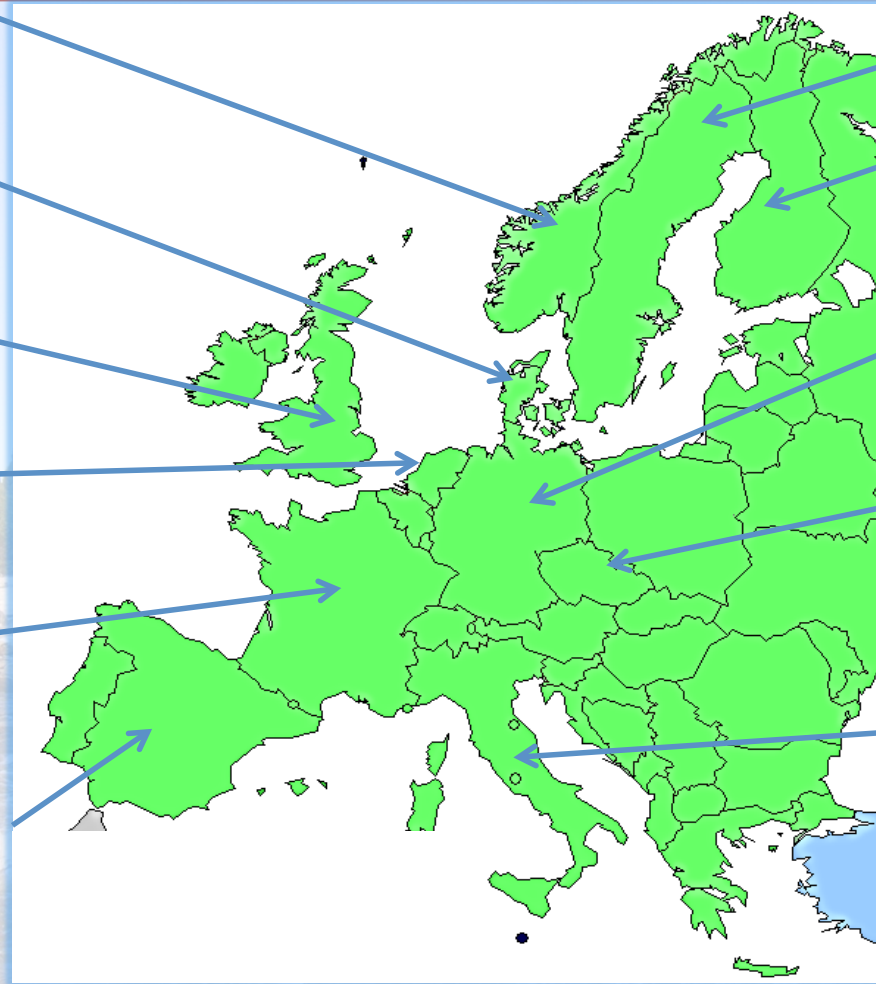
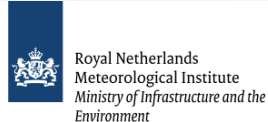
DRIHM & DRIHM2US Final Conference

24.02.2015, Savona, Italy

The European Climate Research Alliance (ECRA) is an association of leading European research institutions in the field of climate research.

ECRA has the objective to bring together, to expand and to optimize European expertise in climate research by sharing existing national research capacities and infrastructures.

Partners, Participants & Associates



- Provide **advice to policy and public** in respect to climate change
- Develop **training, education and outreach activities** (particularly for young researchers)
- Develop **links and sustained partnerships (with industry)** to strengthen the interplay between research outcomes and innovation and to foster the early take-up of promising results
- **Collaborative Programmes** in ECRA (open to all)

“Added Value” for European Research

- **Bottom-up approach**
for a research strategy based on scientists' views
- **Alignment of on-going and future research activities**
(national/European)
 - Common strategy to tackle research questions
 - Exchange of information (science, funding)
 - Exchange of personnel (within CPs)
 - Optimised use of existing infrastructure (e.g. data centres)
- **Strong, unified voice for Climate Research in Europe**

- **Arctic Climate Stability and Change (Arctic)**
*coordinated by AWI/Germany and Bjerknes Centre Norway
in collaboration with the EPB/Norway*
- **High Impact Events and Climate Change (HIE)**
coordinated by KIT/Germany and DTU/Denmark
- **Sea level and Climate Change (SLC)**
coordinated by ENEA/Italy
- **Changes in the Hydrological Cycle (CHC)**
coordinated by CNR/Italy and LMU/Germany

- **CP – Scientific Workshops:**
 - Hydrological Change (2012, 2014, 2015), Arctic Change (2012, 2013), High Impact Events (2013, 2014), Sea Level Changes (2012, 2013, 2015)
- **ECRA Side events at International Conferences**
 - EGU, CORDEX 2013, Proposal submitted to COP21
- **Preparation of project proposals**
 - COST action, MSCA-ITN-201x-ETN
- **White papers, research articles**
- **Parlamentarian Lunches in Brussels**

The changing mountains of Europe: water resources and ecosystems at risk



Strengthening Climate Research in Europe



www.ecra-climate.eu

The changing mountains of Europe: Water Resources and Ecosystems at Risk

Briefing Document



Contact:
Dr. Andreas Krell
Executive Secretary
European Climate Research Alliance
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<http://www.ecra-climate.eu/>

Hosted by Patrizia Toia, MEP Italian Social Democrats
Tuesday 15 October 2013, 12:30 – 14:00 (including lunch)
European Parliament Members' Restaurant, Brussels

Impacts of climate
changes?
Water cycle change in fore-
ground to changes in climate
Impacts of climate and
mountains?



Martin Beniston University of Geneva
Maria del Carmen Llasat University of Barcelona
Elisa Vuillermoz Ev-K2-CNR
Wolfram Mauser LMU Munich

Key topics

The CP intends to foster the study of the changes of the hydrological cycle at global and regional scale, emphasizing on the following cross-linked set of research tasks:

- *Global precipitation changes and runoff*
- *Aerosols and the hydrological cycle*
- *Hydrological cycle and precipitation in mountain areas*
- *Changes in the hydrological cycle in the Mediterranean region*
- ***Interaction between climate and hydrological/land surface processes***

Collaborative Programme Changes in the Hydrological Cycle

Interaction between climate and hydrological/ land surface processes

Baseline:

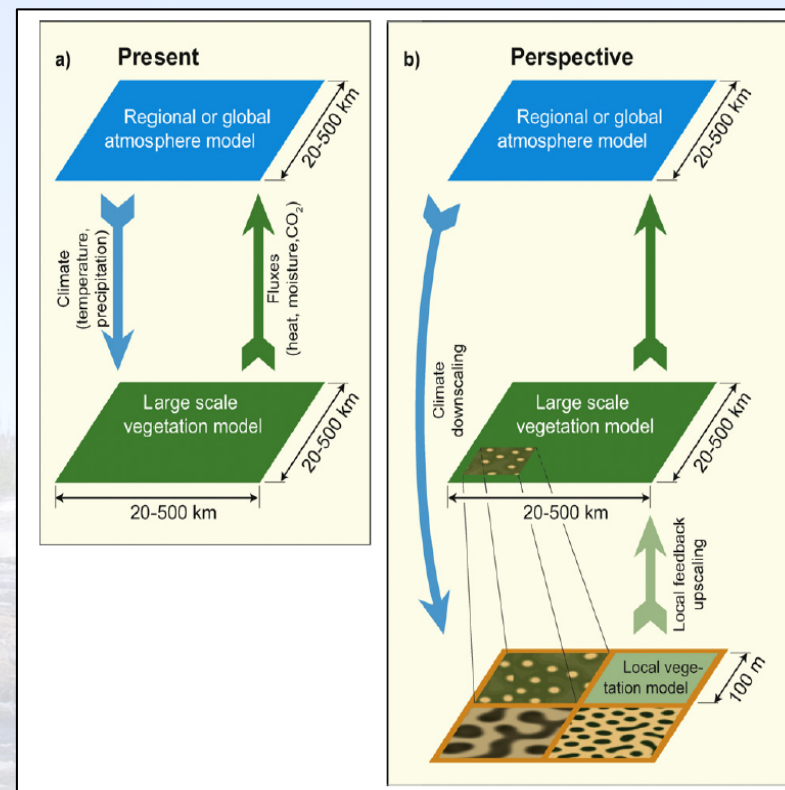
Climate and the hydrological cycle are strongly coupled with land surface and ecosystem processes

Problem:

Scale mismatch between climatic variability, usually resolved at rather large spatial scales, and the much smaller scales of land surface processes

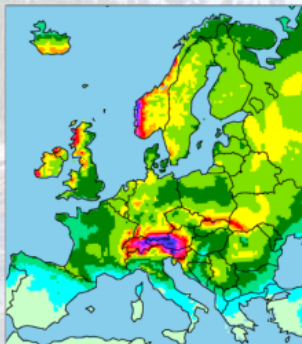
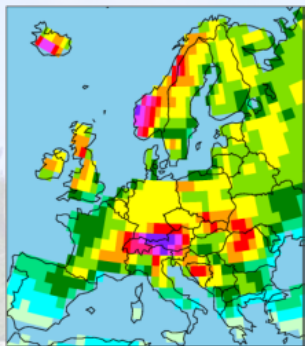
Open questions:

- Upscaling and incorporation of small-scale ecosystem and land surface changes in climate models?
- Downscaling of climate information to properly drive land surface / ecosystem responses
- Assessing the impact of small-scale heterogeneities on climate variability



Cross-scale Interactions in the Continental Water Cycle

The workshop focuses on innovative modeling approaches on:



Topic 1: Climate downscaling methods for assessing impacts on the water cycle and on ecosystems

Topic 2: Atmosphere-soil-vegetation interaction at multiple scales

Topic 3: Extreme precipitation events and their effects on eco-hydrological systems

Topic 4: Cross-scale interaction and macrosystem eco-hydrology

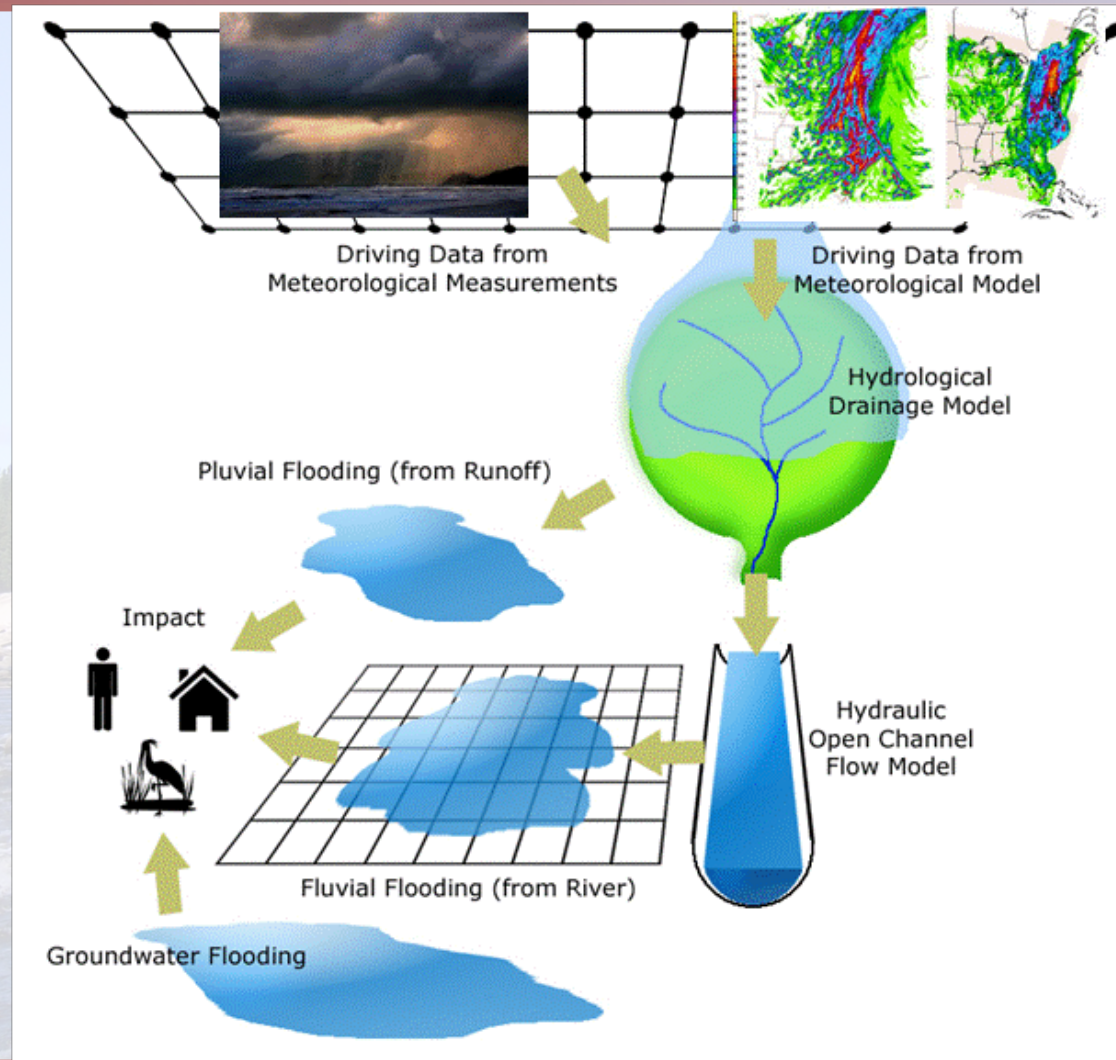
Dates: 30-31 October 2014

Location: CNR Headquarters, Piazzale Aldo Moro, 7 – 00815 Rome, Italy

Organization: Ralf Ludwig, LMU; Antonello Provenza, ISAC-CNR

Website: www.ecra-climate.eu

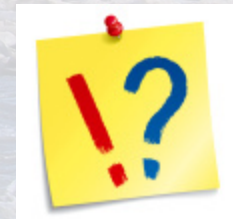
Registration: events@ecra-climate.eu (or contact the organizers; participation is free of charge)



DRIHM – Scientific challenges (revisited)...

... and ECRA?

- (a) understand, explain and predict the physical processes producing such extreme storms;*
- (b) understand the possible intensification of such events in the Mediterranean region and their physical origin;*
- (c) explore the potential of the increasing computational power and Information Communication Technology (ICT), such as scientific gateway solutions, easy model coupling, grid computing and petascale computing systems, to provide deeper understanding of those events.*





Currently different agendas – but great potential for collaboration...

- DRIHM: e-Infrastructure, model chaining, link with practical / operational uses (CivP, DRR)
- ECRA: spatial and temporal scaling, climate change focus, variety of topics



Currently different agendas – but great potential for collaboration...

- (parts of) DRIHM may want to join ECRA to introduce (parts of) its expertise
- (parts of) ECRA may want to join the VO „drihm.eu“ to introduce a wider coverage of topics

European Climate Research Alliance

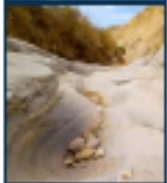
General Assembly 2015:

„New knowledge for risk reduction“

25-26 March 2015, Square Brussels Meeting Centre,
Coudenberg 3, 1000 Brussels



Climate Change is a key challenge for our society. The IPCC has highlighted some of the expected risks of climate change: decreasing Arctic sea ice, sea-level rise, increased extreme events and fundamental changes in the hydrological cycle.



European Climate Research needs to enhance collaboration and coordination of existing resources to effectively manage the risks and opportunities associated with climate change. The need for European Climate Research to inform society is further emphasized by the UN Climate Conference COP 21 in Paris, December 2015.



The European Climate Research Alliance (ECRA) is an association of leading European research institutions in climate research. ECRA aims to bring together, to expand and to optimise European expertise in climate research by sharing existing national research capacities and infrastructures. Furthermore, ECRA advises on scientific developments through a bottom-up process.



The ECRA General Assembly 2015 will present key challenges in climate research identified in ECRA's Collaborative Programmes. Future challenges posed by climate change will be discussed in the context of research priorities, providing a comprehensive and robust knowledge base for future mitigation and adaptation measures.

Registration before 15th March 2015: www.ecra-climate.eu

ECRA - General Assembly 25/26 March 2015

25th March 2015:

Participation and Collaboration in Climate Research

15:00-15:30 Registration + Welcome Coffee

15:30-15:45 Welcome

Karin Lochte (ECRA-Chair, AWI, Germany)

15:45-17:30 Presentation of ECRA and the Collaborative Programmes (CP)

CP Arctic and Climate Change (Thomas Jung, AWI, Germany)

CP Hydrological Cycles (Antonello Provenzale, CNR, Italy)

CP High Impact Events (Peter Braesicke, KIT, Germany)

CP Sea Level Change and Coastal Impacts (Gianmaria Sannino, ENEA, Italy)

17:30-18:30 Refreshments

Evening discussion

Importance of collaboration in Climate Research to face societal challenges:

Pathways and models of collaboration

18:30-19:00 Keynote Statements

Karin Lochte (ECRA-Chair, AWI, Germany)

Kurt Vandenberghe (European Commission, DG Research and Innovation)

19:00-20:00 Panel discussion (Moderation: Ralf Ludwig, LMU, Munich):

- o Kurt Vandenberghe (European Commission DG Research and Innovation)
- o Humberto Delgado Rosa (European Commission, DG Climate Action)
- o David Carlson (WCRP, WMO)
- o Karin Lochte (ECRA-Chair, AWI, Germany)
- o Martin Visbeck (Future Earth, GEOMAR, Germany)
- o Sanna Sorvari (JPI Climate, FMI, Finland)

20:00-20:15 Final Statements (Panelists) and closing remarks (Moderation)

20:15 Reception

26th March 2015:

ECRA - Collaborative Programmes (CPs)

8:30-9:00 Registration and Welcome Coffee

CP Arctic Climate Stability and Change (Moderation: Eystein Jansen, Bjerknes Centre, NO)

9:00-9:15 Jeremy Wilkinson (BAS, UK)

Why is Arctic sea ice disappearing so rapidly?

9:15-9:30 Lars Smedsrud (UNIS/ Bjerknes Centre, Norway)

What are the local impacts of Arctic climate change?

9:30-9:45 Francisco Doblas-Reyes (ICREA/IC3/BSC, Spain)

What are the global impacts of Arctic climate change?

9:45-10:00 Ralf Döscher (SMHI, Sweden)

How can environmental prediction capabilities be advanced?

10:30-11:00 Coffee Break

CP Hydrological Cycles (Moderation: Antonello Provenzale, CNR, Italy)

11:00-11:15 Harald Kunstmann (KIT-IMK/IFU, Uni Augsburg, Germany)

Closure of the large scale water cycle: Performance and limitations of models and observations

11:15-11:30 Jens H. Christensen (DMI, Denmark)

Are we able to simulate the main observed processes and feedbacks?

11:30-11:45 Elisa Palazzi (ISAC-CNR, Italy)

Prediction of precipitation (uncertainties) under different climate change scenarios

11:45-12:00 Franz Prettenhaler (Joanneum Research, Austria):

Societal challenges (impacts of hydrological changes, risk assessment)

12:30-13:30 Lunch

CP High Impact Events (Moderation: Martin Drews, DTU, Denmark)

13:30-13:45 Jana Sillmann (CICERO, Norway)

Observed and simulated temperature extremes during the recent warming hiatus

13:45-14:00 Romualdo Romero (UIB, Spain)

Learning for the future from the observation and modelling of Medicanes

14:00-14:15 Bart van den Hurk (KNMI, Netherlands)

Scenarios of future weather

14:15-14:30 Kirsten Halsnaes (DTU, Denmark)

Climate risks and adaptation

15:00-15:30 Coffee Break

CP Sea Level Change and Coastal Impacts (Moderation: Jan Even Øie Nilsen, NERSC, NO)

15:30-15:45 Anny Cazenave (LEGOS, France)

Observation of global sea level changes

15:45-16:00 Damià Gomis (UIB, Spain)

Sea-Level Change in semi-enclosed basins. The case of the Mediterranean Sea.

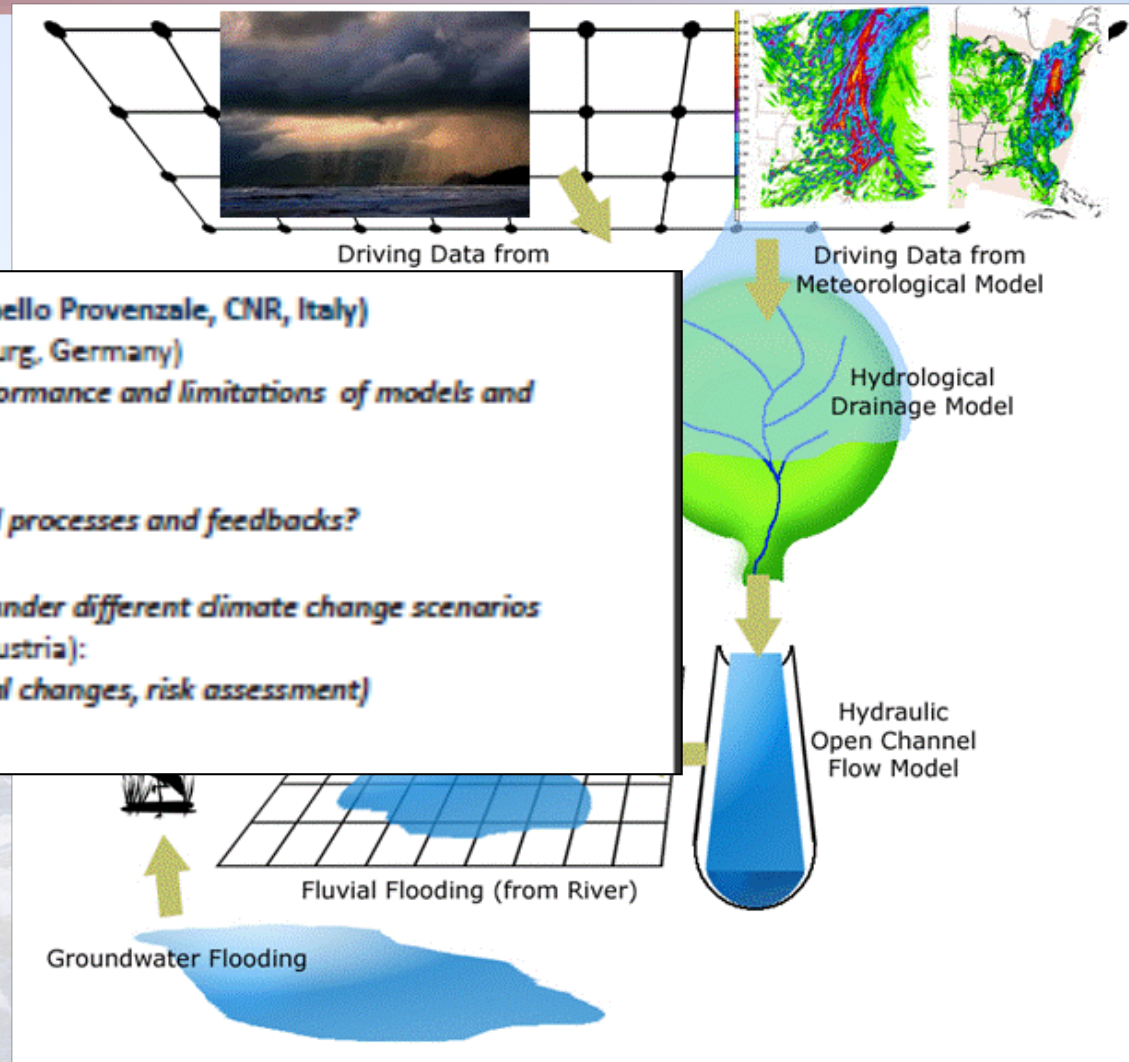
16:00-16:15 Svetlana Jevrejeva (NOC, UK)

Uncertainties in global and regional sea level projections by 2100

16:15-16:30 Saskia Werners (Wageningen UR, Netherlands)

Societal Challenges (impacts of Sea level changes for society, risk assessment)

17:00 End



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Thank you for your attention!
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