
Atmospheric Physics

CSE - Info Event, May 31 2018

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MSc coordinator

Institute for Atmospheric and Climate Science

ETH Zürich

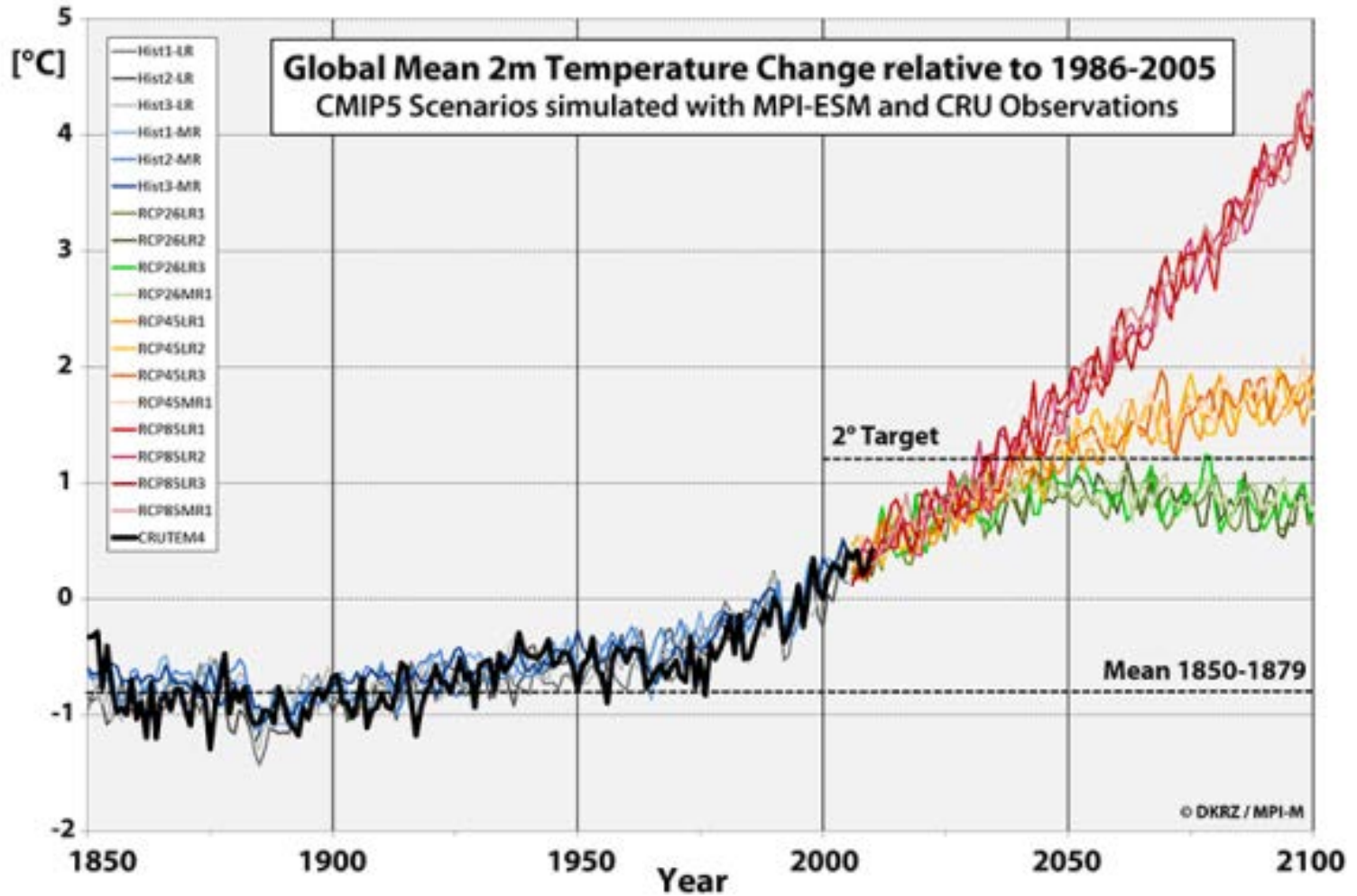
Atmospheric and Climate Science:

a field with high public interest

and

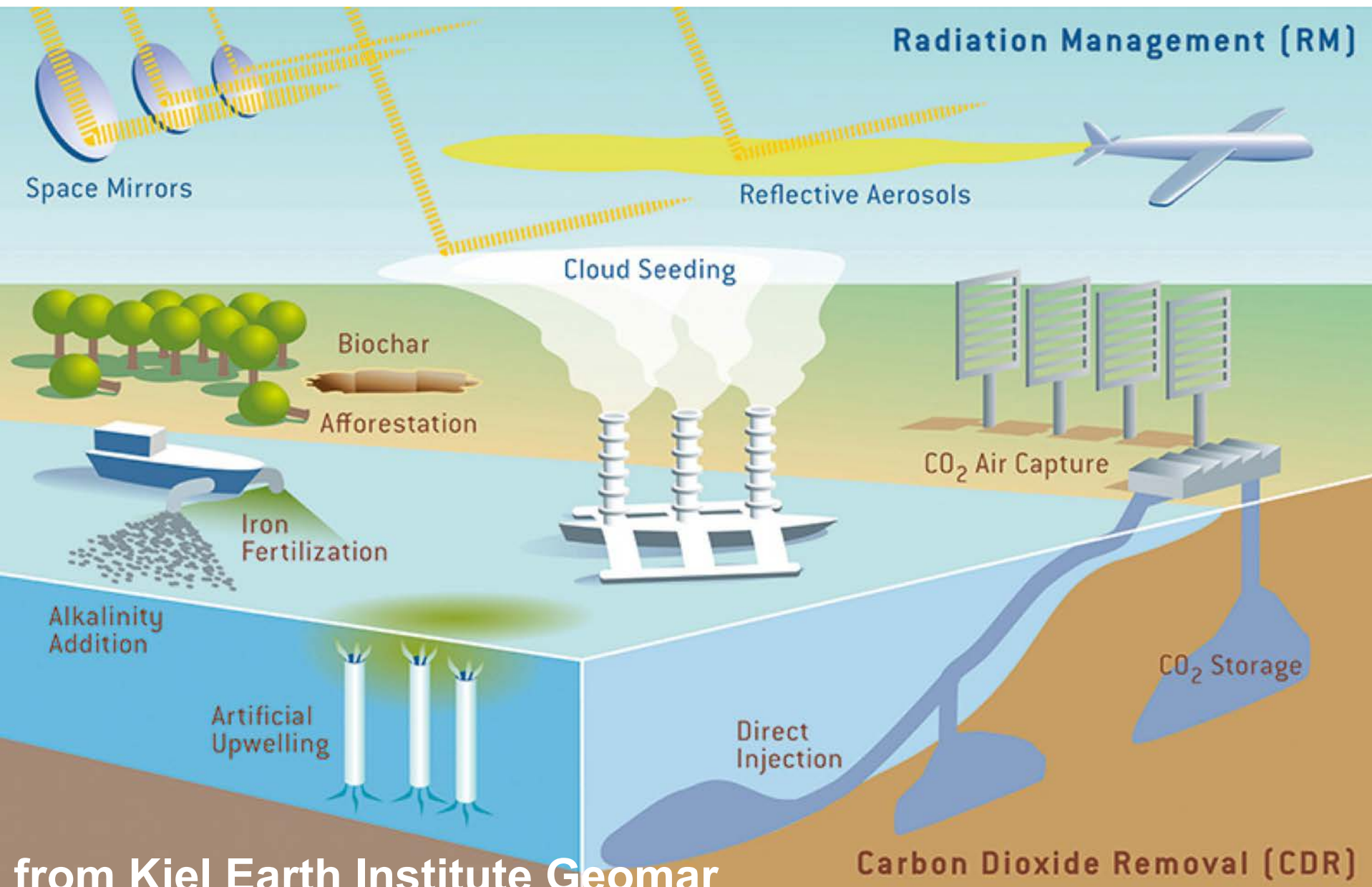
many open questions

Climate change – can we reach the 2° target ?

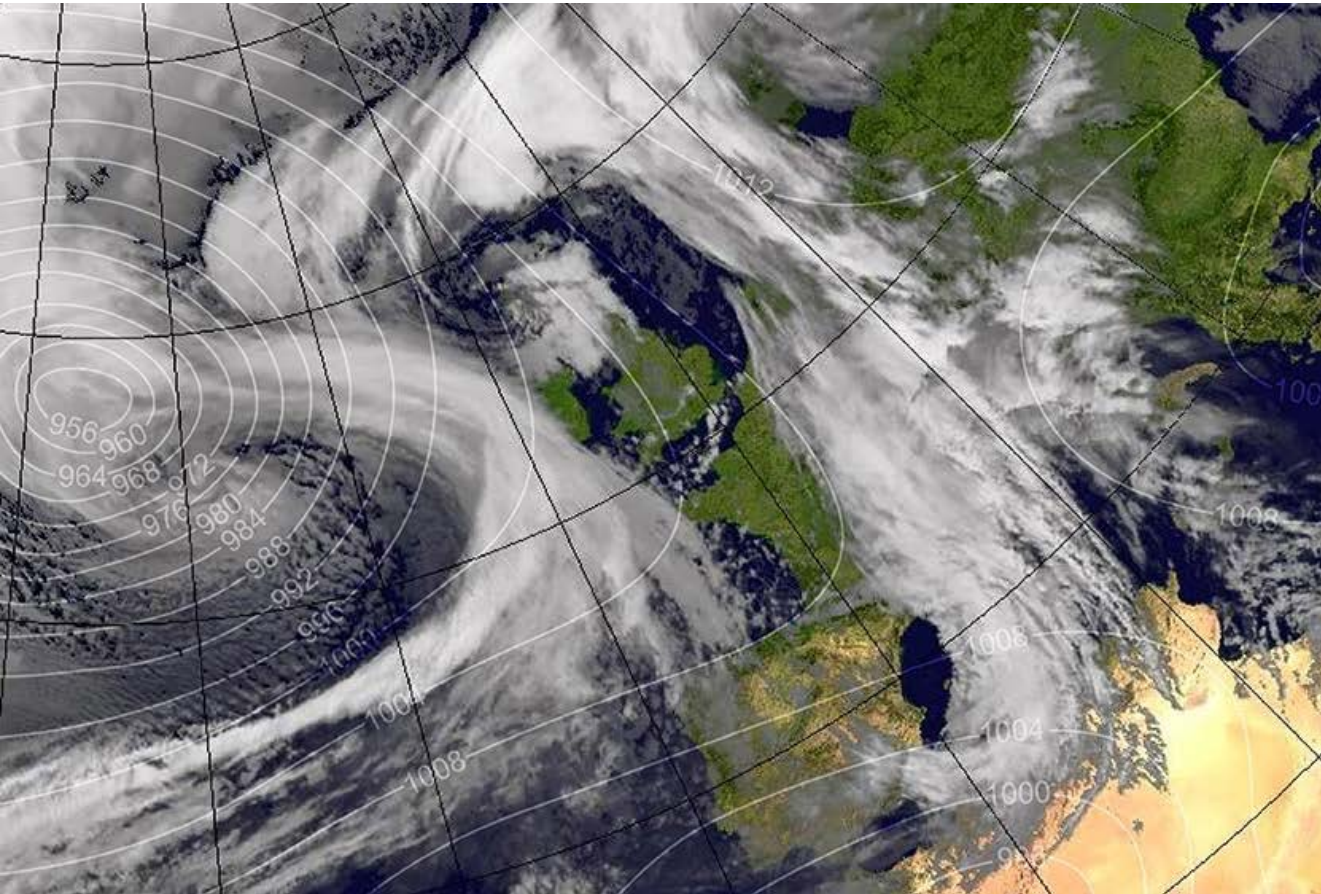


from dkrz.de

Geo-Engineering – the solution to climate change?



Do we understand extra-tropical storms ? ... and can we predict them ?



Do we understand the formation of clouds?

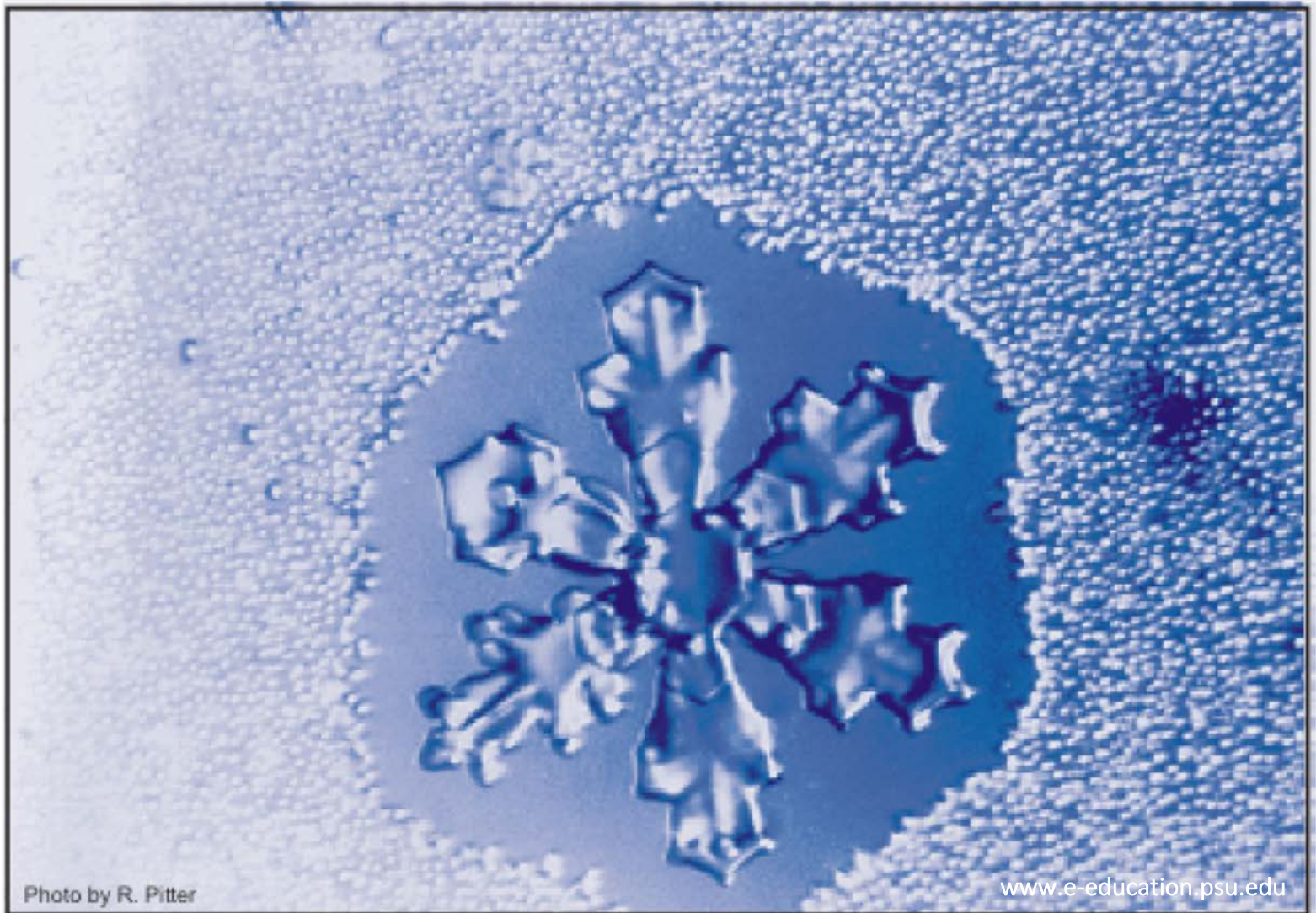
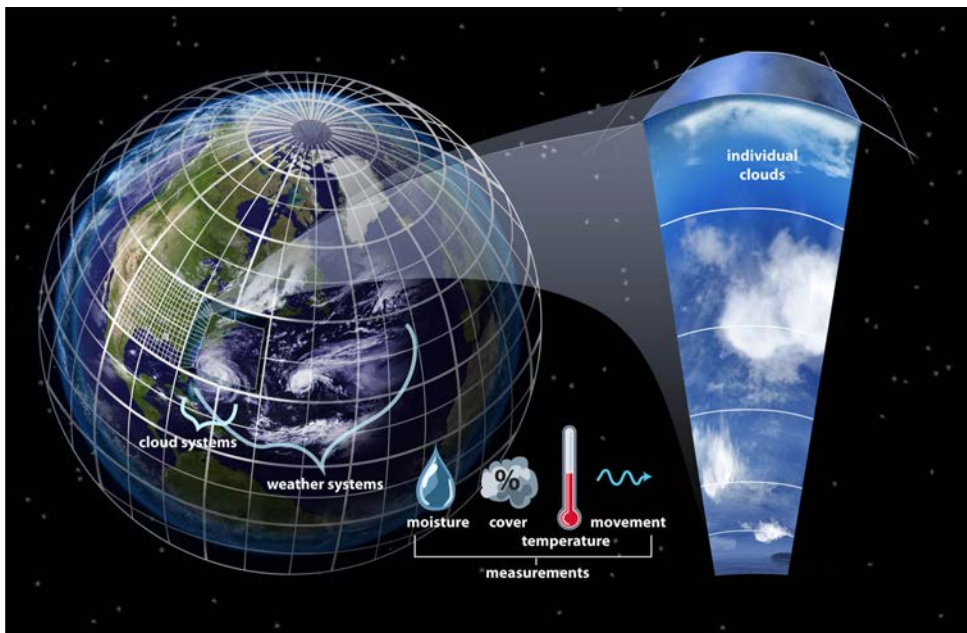


Photo by R. Pitter

www.e-education.psu.edu

How can we represent all important processes in models ?



https://www.nsf.gov/news/special_reports/clouds/images/photos/large/illustration.jpg

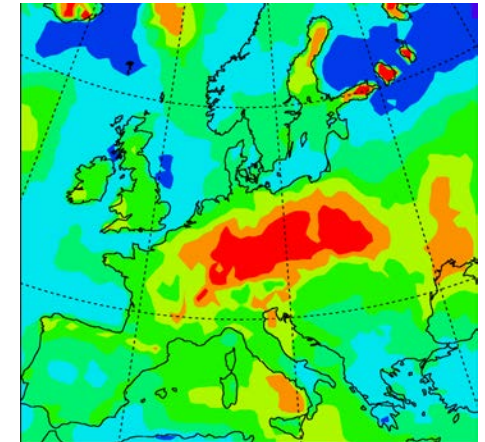
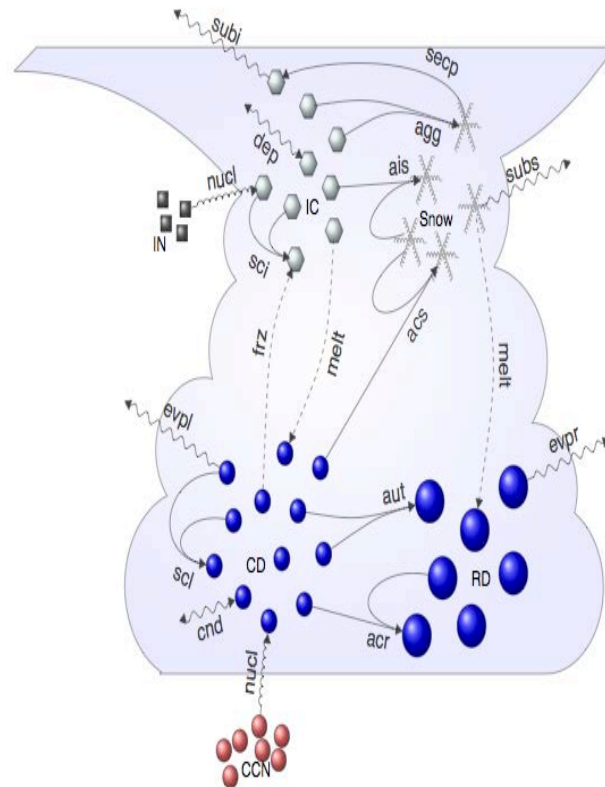
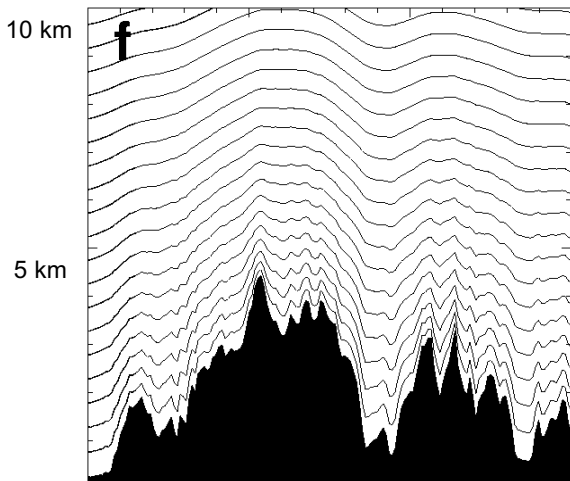
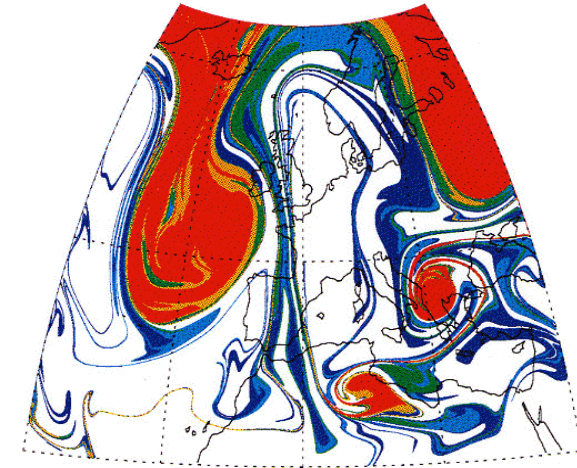
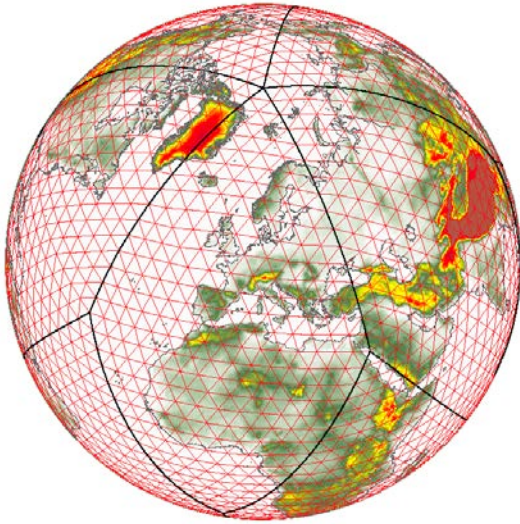


Towards petaflop
computing

need for high performance
computing, e.g. Piz Daint at
CSCS

Can we represent all important processes in models ?

slide from C. Schär



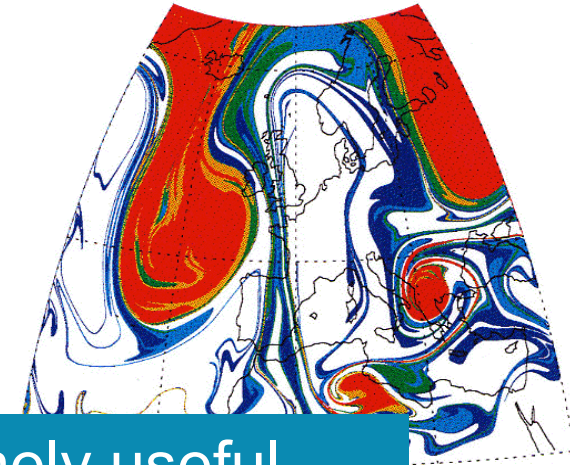
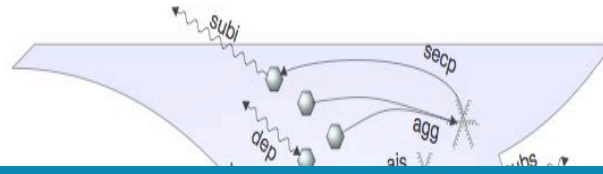
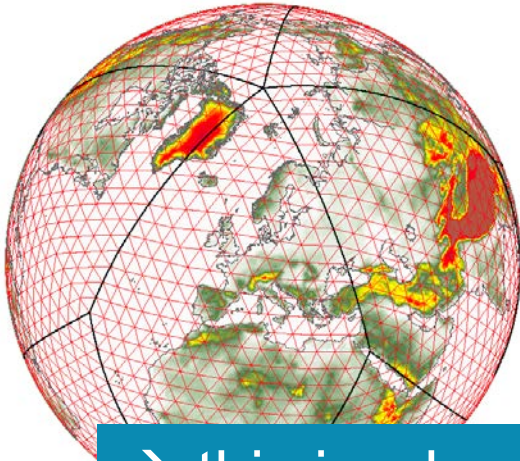
Numerical formulation of fluid dynamics in weather and climate models

Parameterization of physical processes (radiation, clouds, etc)

Application in weather and climate research

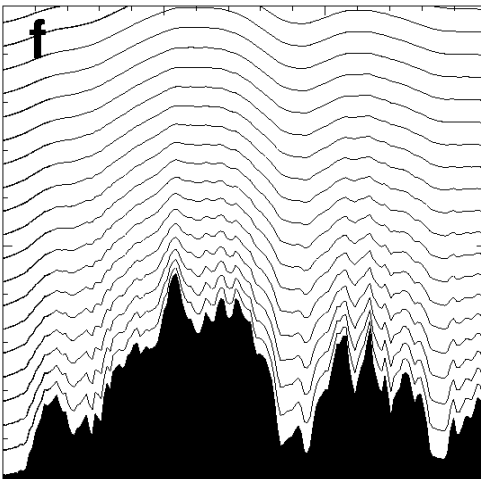
Can we represent all important processes in models ?

slide from C. Schär

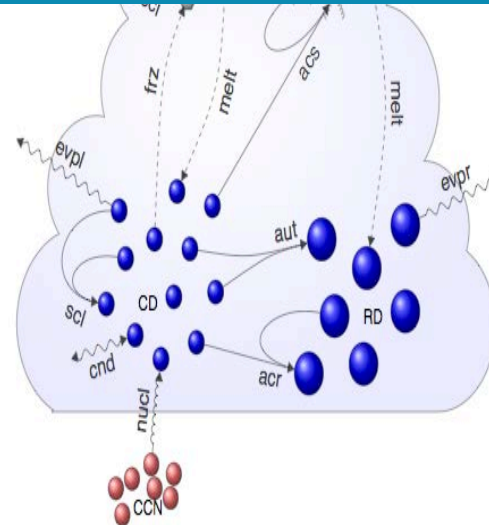


→ this is where your expertise is extremely useful

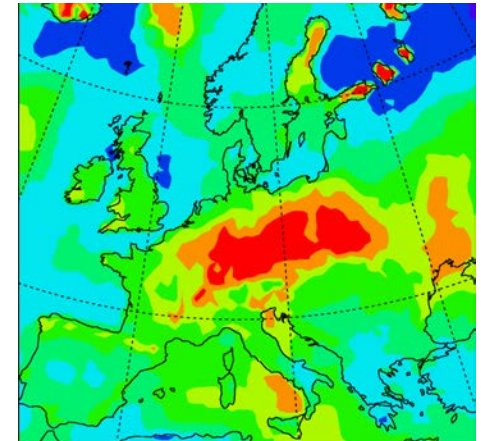
10 km



Numerical formulation of fluid dynamics in weather and climate models



Parameterization of physical processes (radiation, clouds, etc)



Application in weather and climate research

Introduction to atmospheric and climate science

Atmosphäre (Fischer & Peter)

Dynamics of large-scale atmospheric flow (Wernli & Papritz)

Atmospheric and climate modeling

Numerical modeling of weather and climate (Schär & Lohmann)

Boundary-layer meteorology (Rotach & Calanca)

The Global Atmospheric Circulation (Domeisen)

European Climate Change (Schär, Rajczak, Scherrer)

Seminar

Seminar in atmospheric physics for CSE (Joos & Schär,
linked to MSc in Atmospheric and Climate Sciences)



More Information:

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