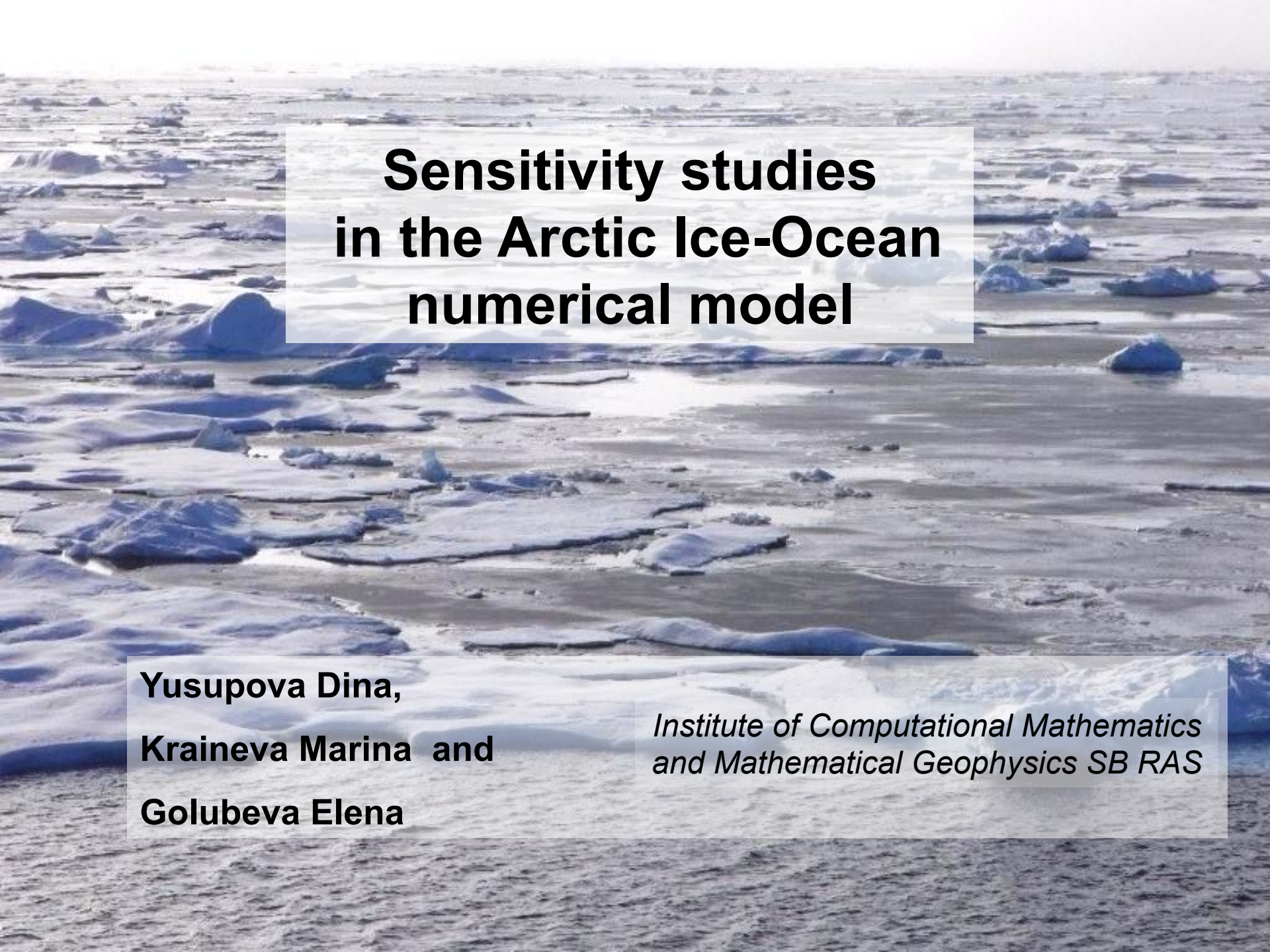


A wide-angle photograph of an Arctic sea ice landscape. The foreground and middle ground are filled with numerous ice floes of various sizes, shapes, and thicknesses, ranging from small, thin sheets to larger, more substantial chunks. The ice is a mix of white and light blue, with some areas appearing darker due to shadows or meltwater. The background shows a vast, flat expanse of ice stretching towards a distant, hazy horizon under a pale, overcast sky. The overall scene conveys a sense of a cold, desolate, and expansive environment.

Sensitivity studies in the Arctic Ice-Ocean numerical model

**Yusupova Dina,
Kraïneva Marina and
Golubeva Elena**

*Institute of Computational Mathematics
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- An improved modeling of the Arctic climate system is necessary to clarify the role of the Arctic in the global climate system.
- It's necessary to ensure that numerical models reproduce the certain climatic processes
- The sensitivity of the regional model of the Arctic Ocean to variations in the definition of atmospheric flows is investigated

Coupled Ice-Ocean Model

**3D Ocean Circulation Model of ICMMG SB RAS based on
z-level vertical coordinate approach**

*(Kuzin [1985], Golubeva et al., [1992], Golubeva, [2008],
Golubeva and Platov, [2007])*

Ice model-CICE 3.14 (elastic-viscous-plastic)

*W.D.Hibler , 1979, E.C.Hunke, J.K.Dukowicz, 1997,
C.M.Bitiz, W.H.Lipscomb 1999, W.H.Lipscomb, E.C.Hunke 2004*

The list of required conditions at the surface of the ocean-ice

- heat flux:
 - latent,
 - sensible,
 - incoming solar and long-wave radiation,
 - Long-wave radiation from the surface;
- wind stress
- the flow of fresh water associated with precipitation in the form of rain and snow

The list of required atmospheric data

- the speed and direction of surface wind,
- the potential and the absolute temperature of the lower atmosphere,
- specific humidity,
- surface pressure,
- air density,
- the total downward solar and infrared radiation,
- the intensity of precipitation



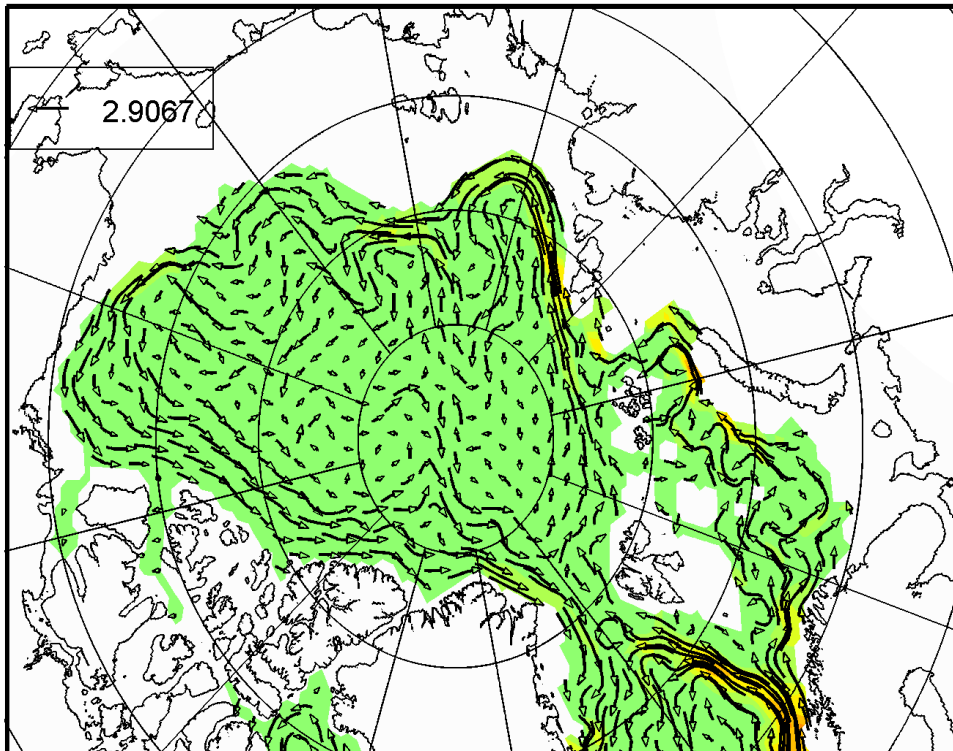
- An accent on layer of warm Atlantic waters

Results of experiment

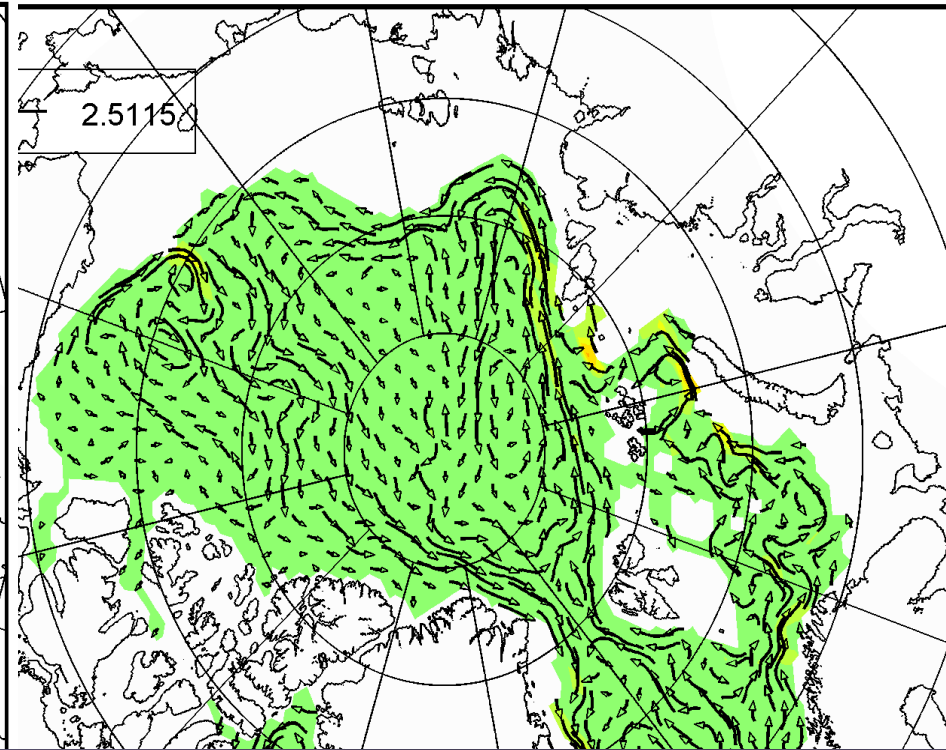
CORE1

CORE2

CORE1. Velocity (cm/s) z=200m t=1994



CORE 2. Velocity (cm/s) z=200m t=1994



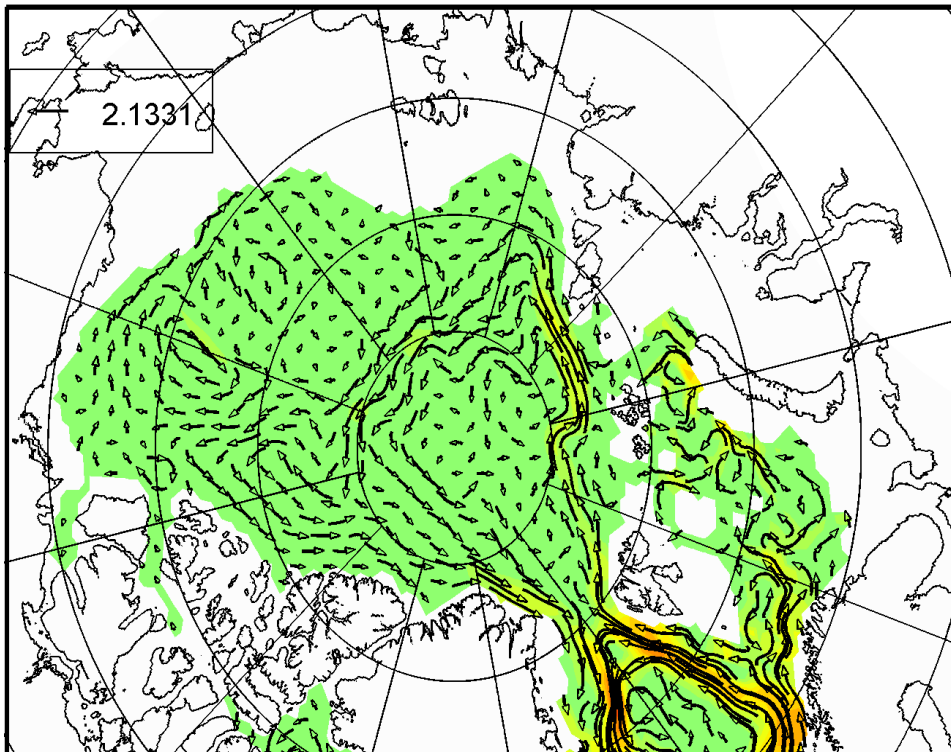
1994

Results of experiment

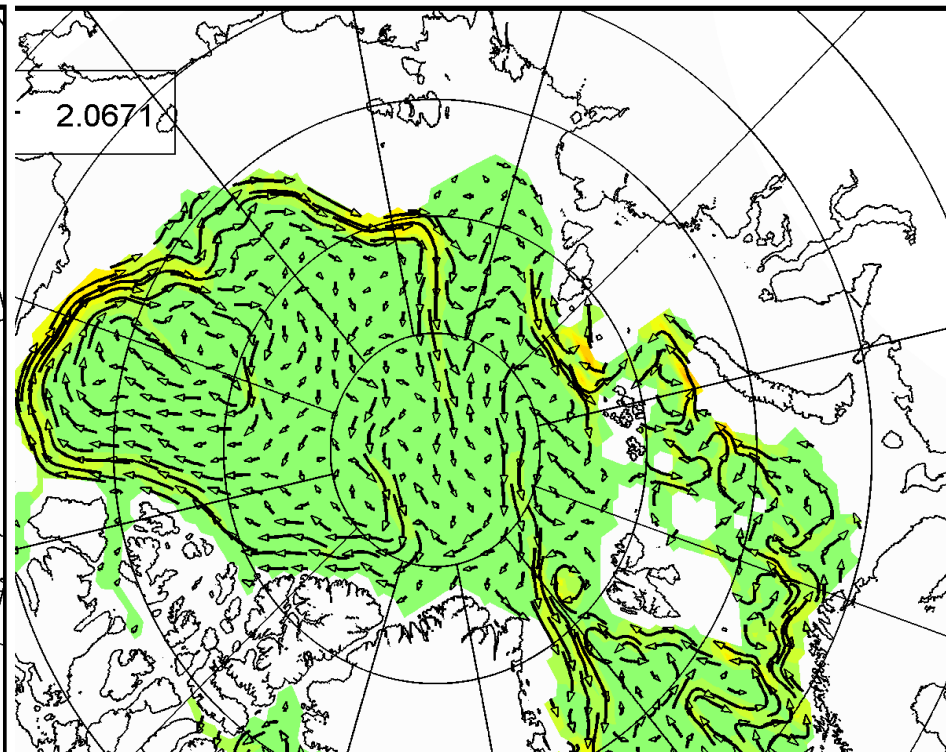
CORE1

CORE2

CORE 1. Velocity (cm/s) z=200m t=2009

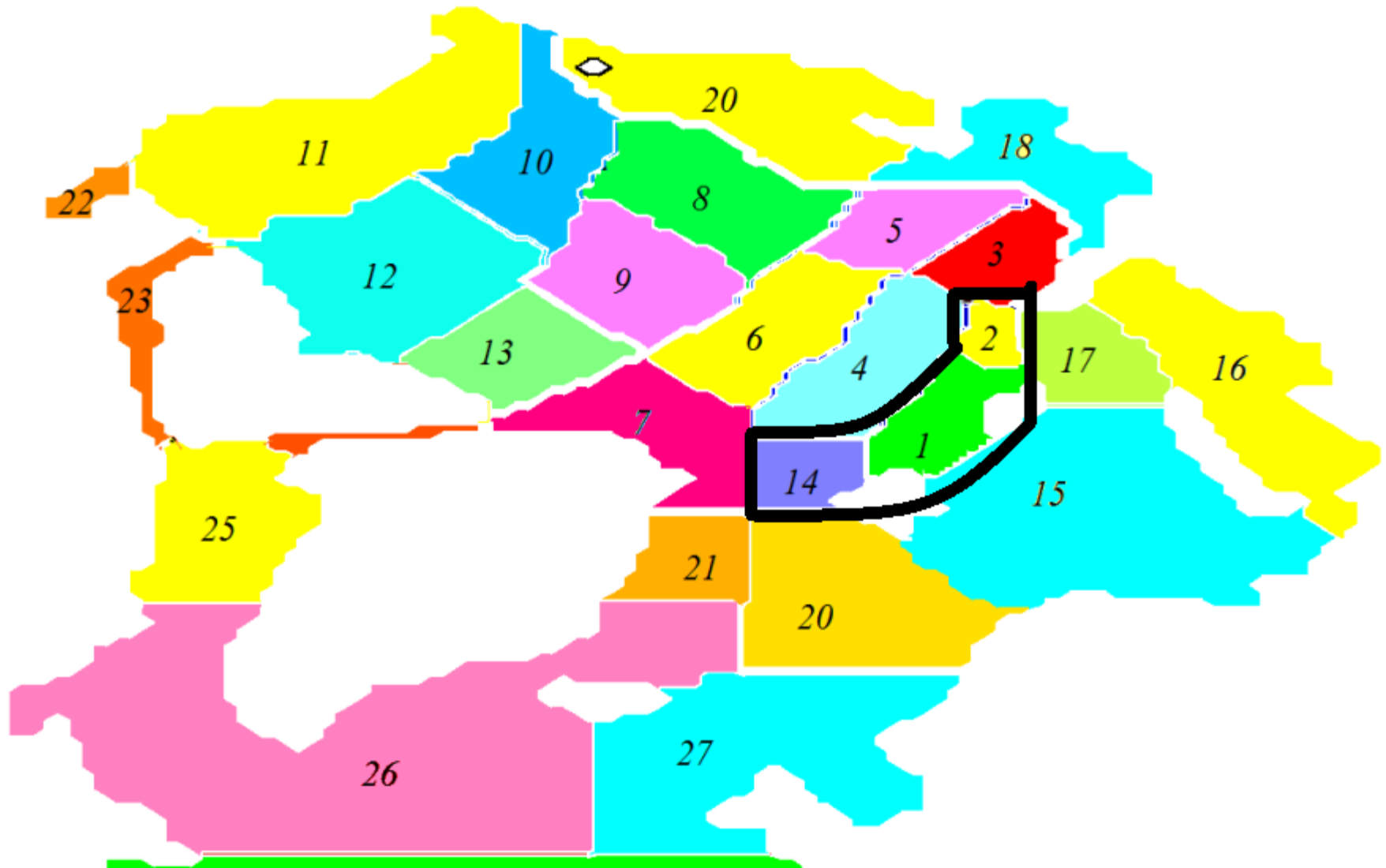


CORE2. Velocity (cm/s) z=200m t=2009



2009

Analyze

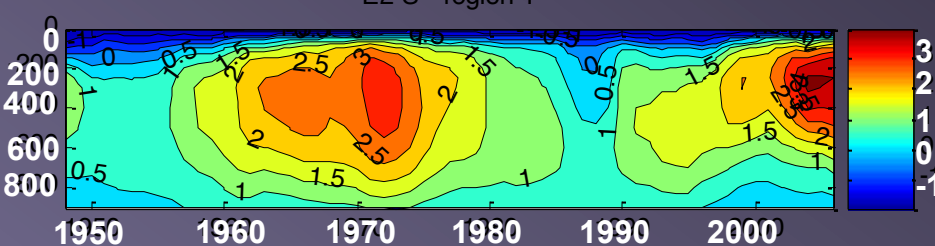
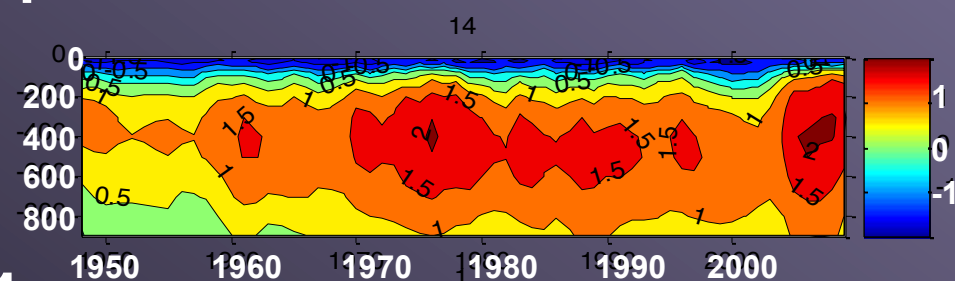
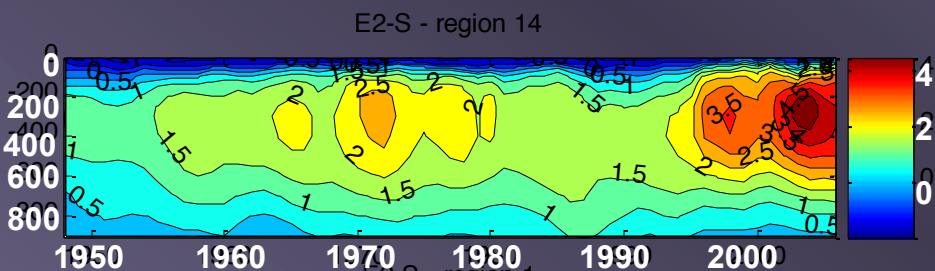


Analyze

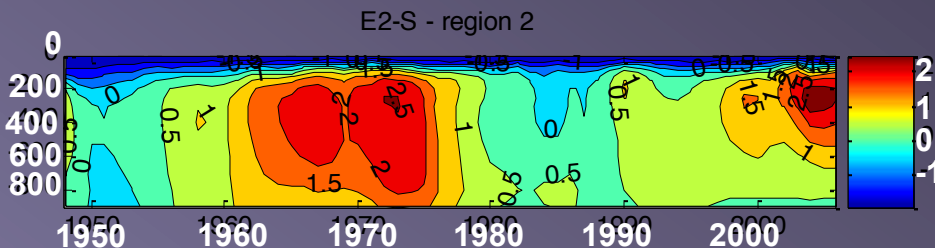
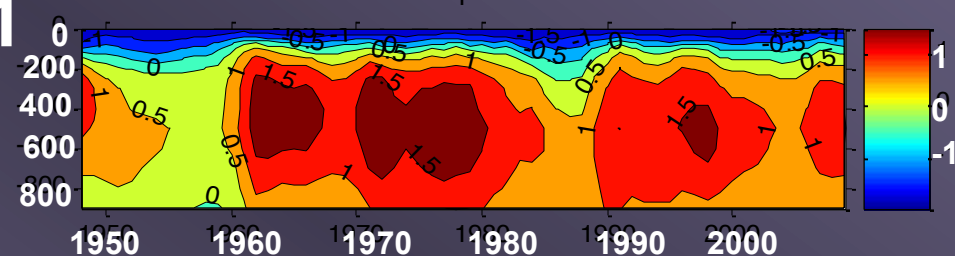
CORE1

CORE2

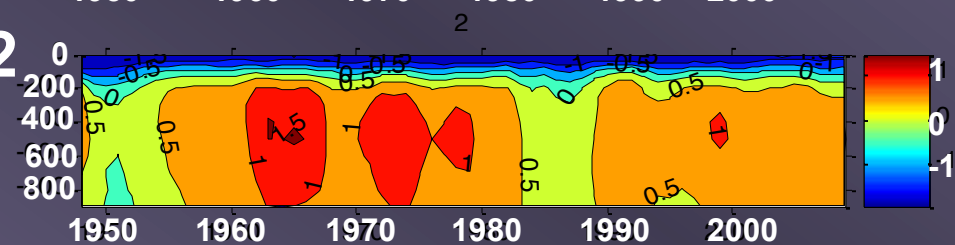
14



1



2



Thank you for attention!

Welcome to poster!