

# ORCA-LIM preliminary results of the AOMIP spin up experiment



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# AOMIP Atmospheric Forcing

- NCEP/NCAR daily surface air temperatures, and sea level pressure
- monthly climatological surface relative humidities, cloud fractions, and precipitation rates

## AOMIP Bulk formulas

Surface fluxes of heat, freshwater and momentum



Relaxation towards PHC SSSs during the first 11 years



## ORCA2-LIM (global domain, roughly $2^\circ \times 2^\circ$ resolution)

### LIM sea ice model

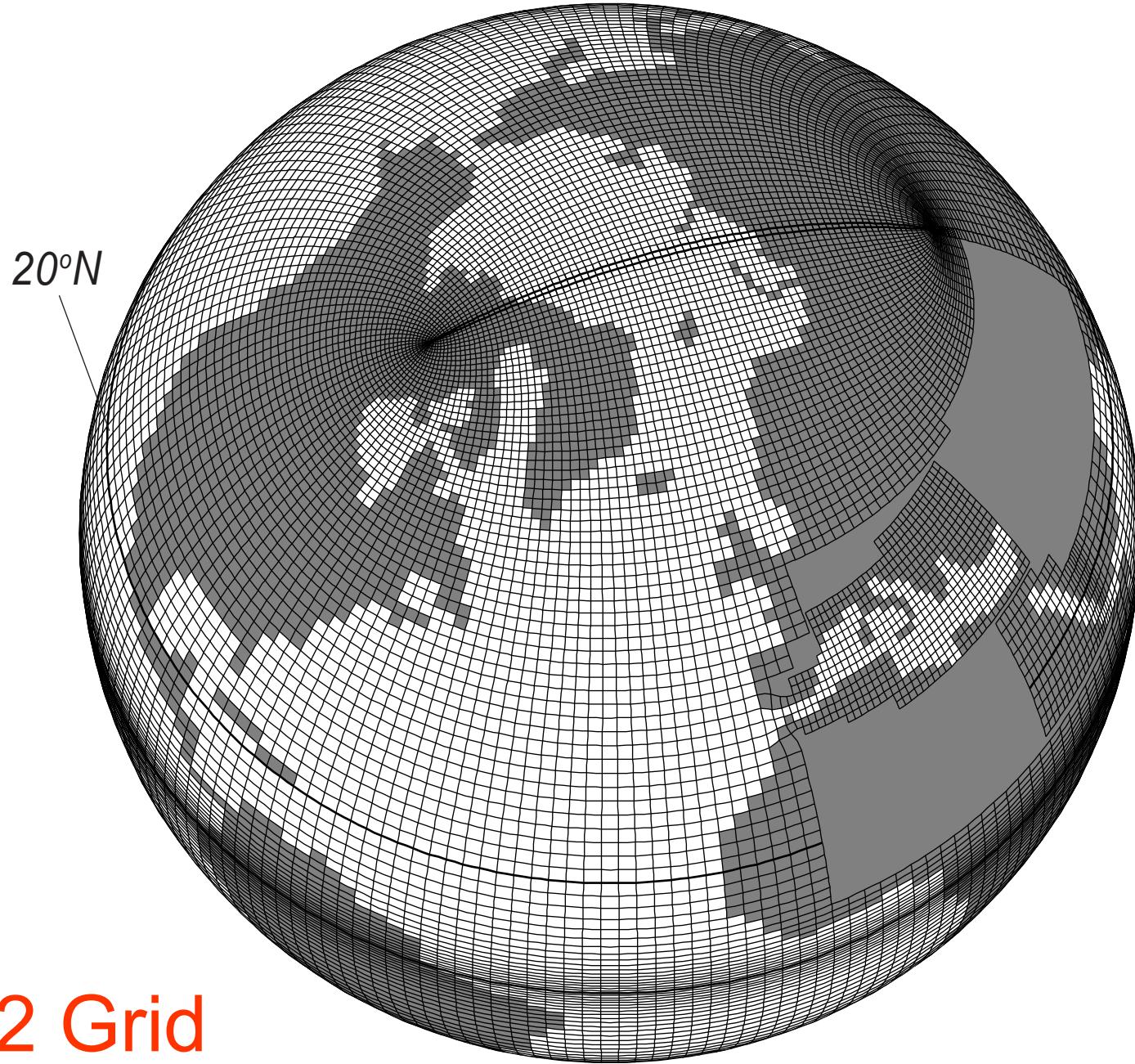
- 3-layer snow-ice model
- 2 level ice-thickness distribution
- Viscous-plastic rheology
- global set of parameters

### ORCA2 ocean model

- OPA 8.2 in a global configuration
- Primitive equations, free surface
- z-coordinate; 30 vertical levels
- level 1.5 turbulence closure



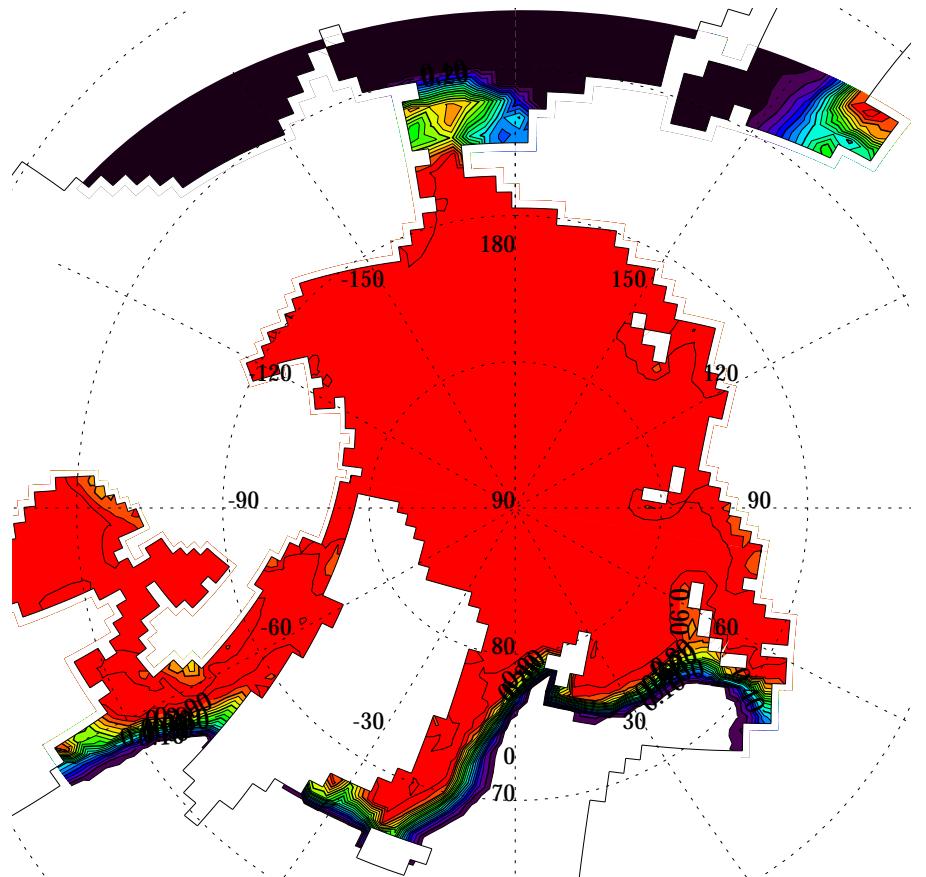
$$dt = 15/d$$



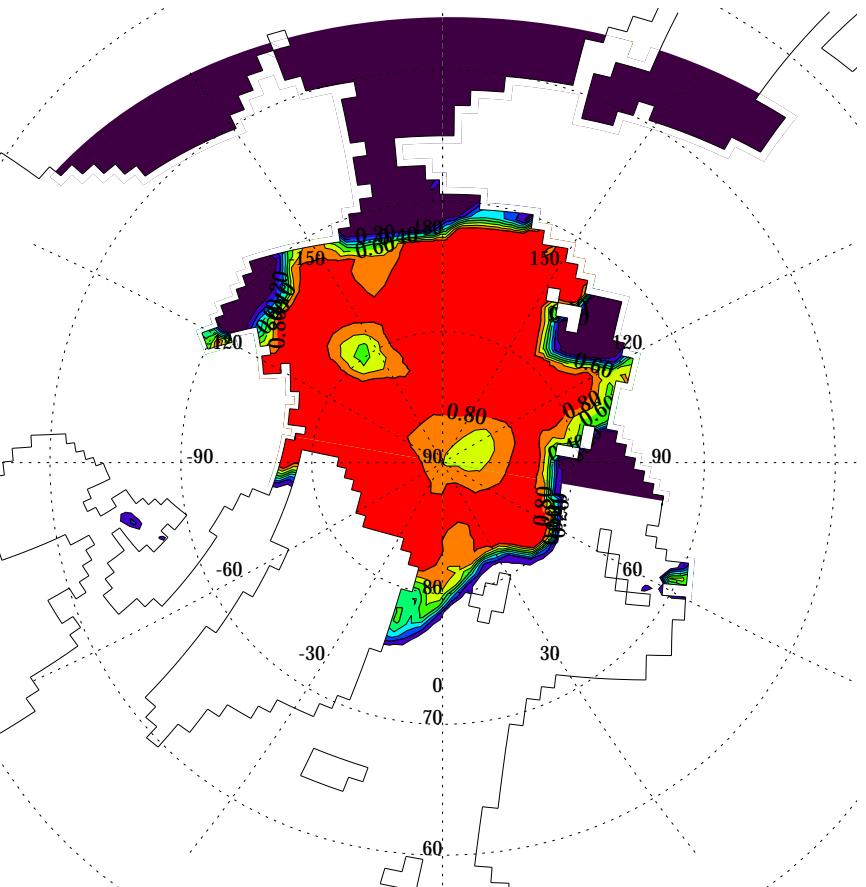
ORCA2 Grid

# Simulated Ice extent in 1978

March

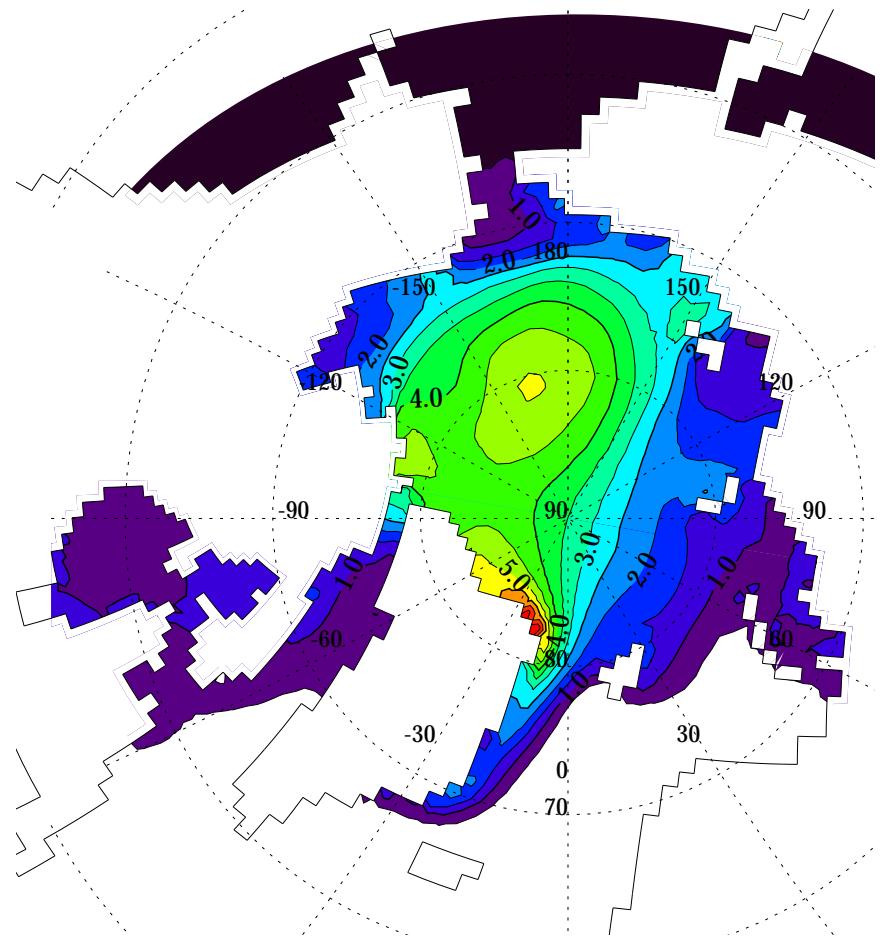


September

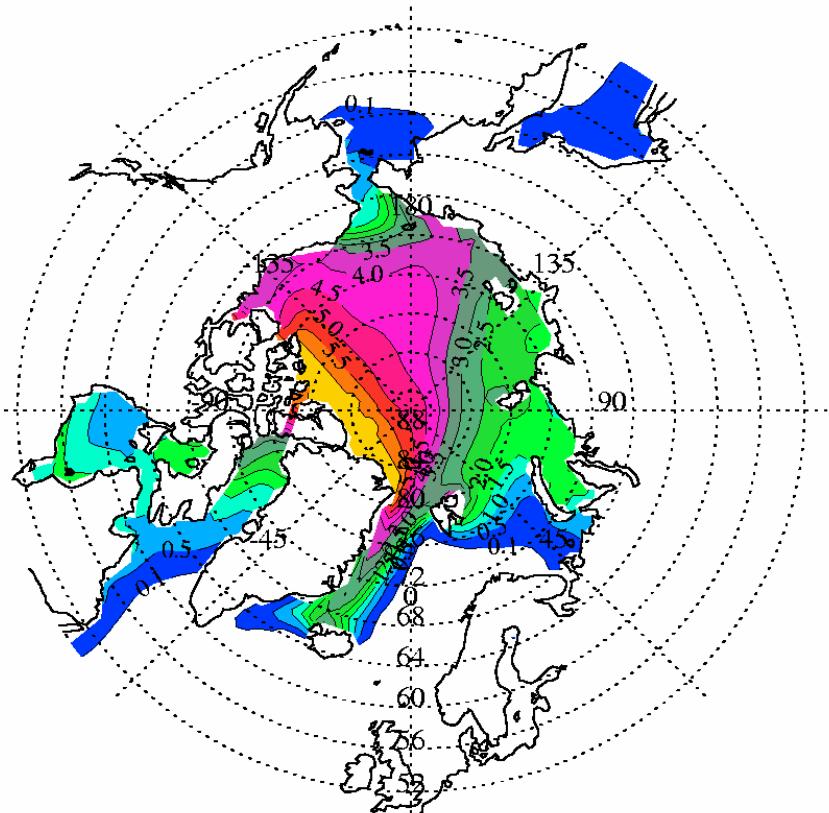


# Annual mean ice thickness

AOMIP forcing 1978

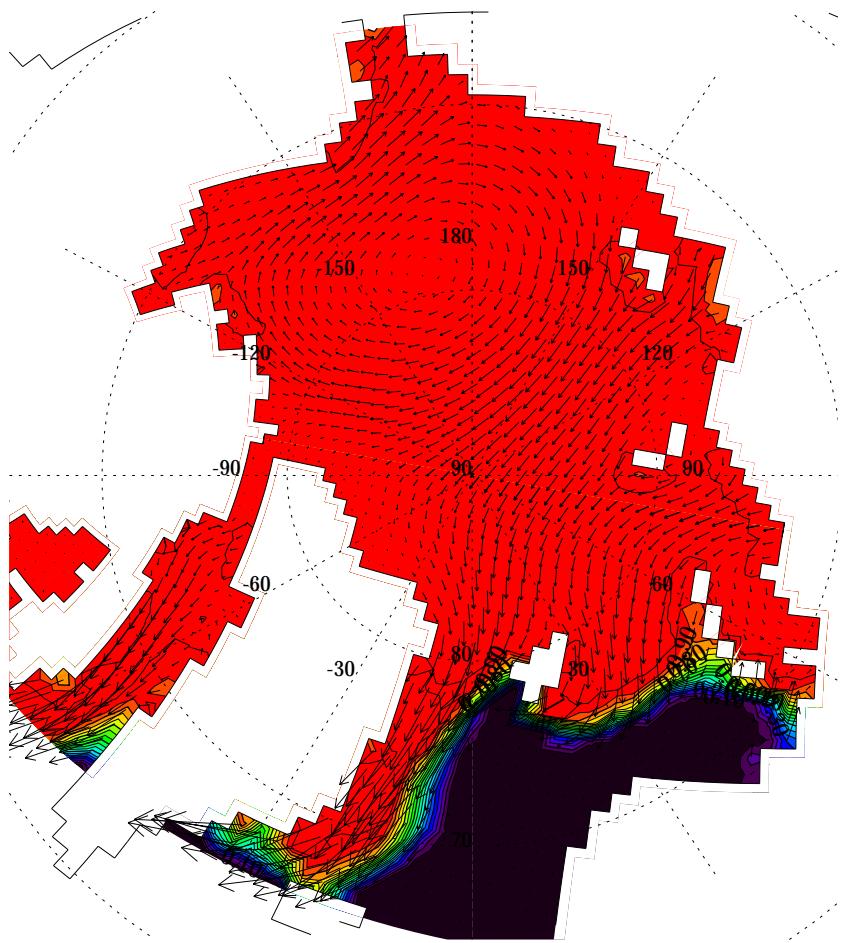


Standard forcing

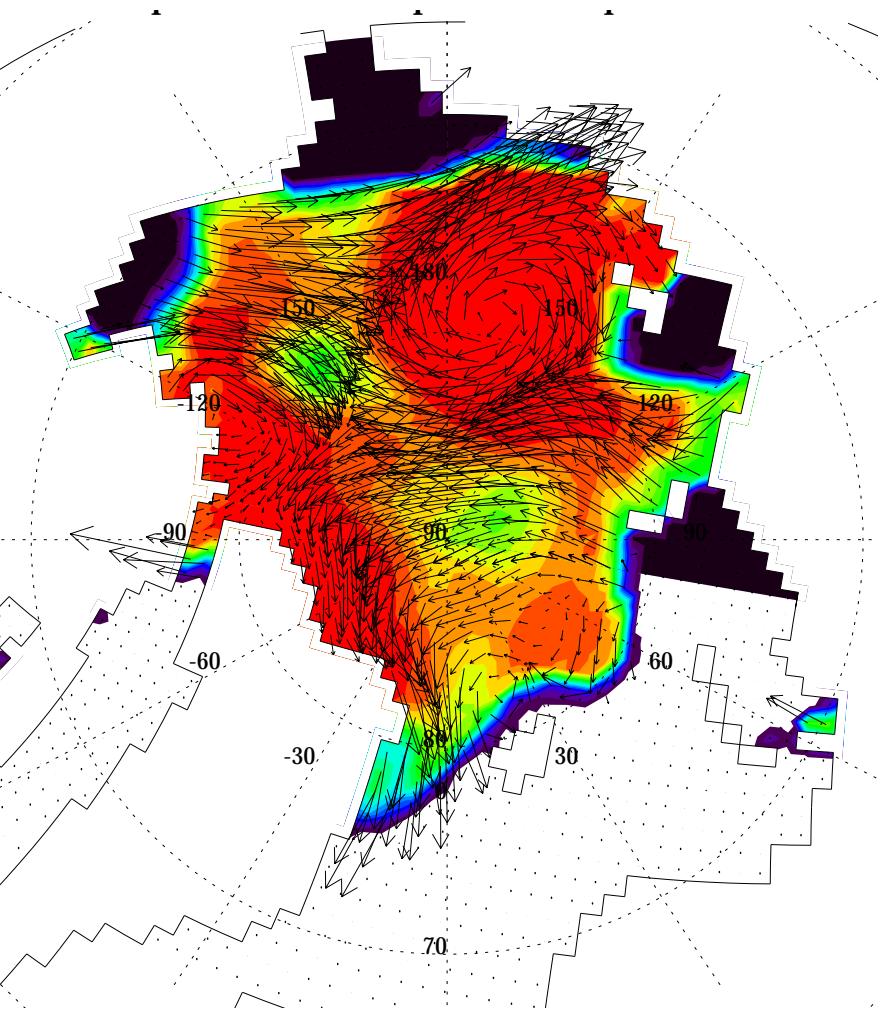


# Sea ice drift in 1978

March

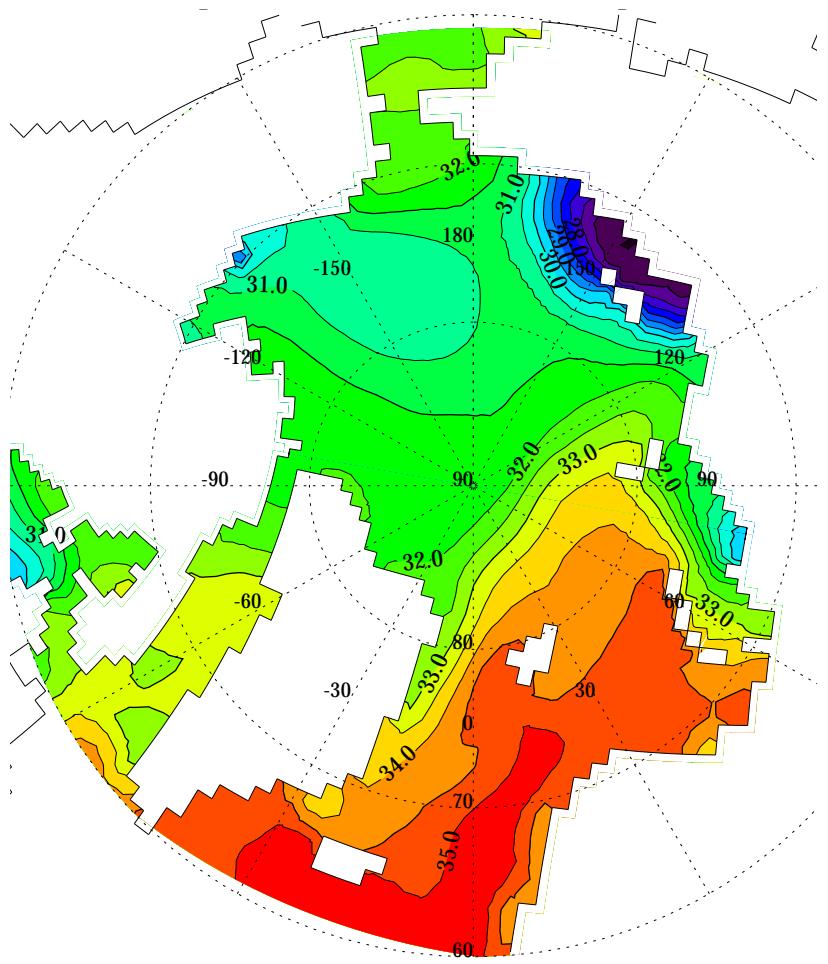


September

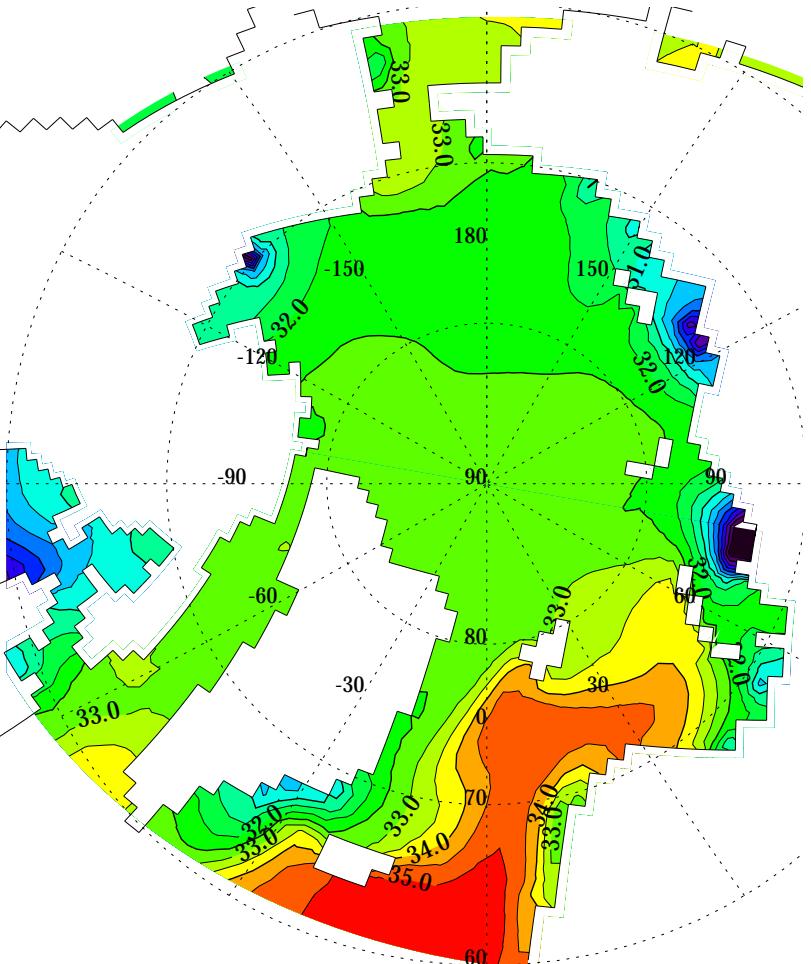


# Annual mean surface salinity

1948

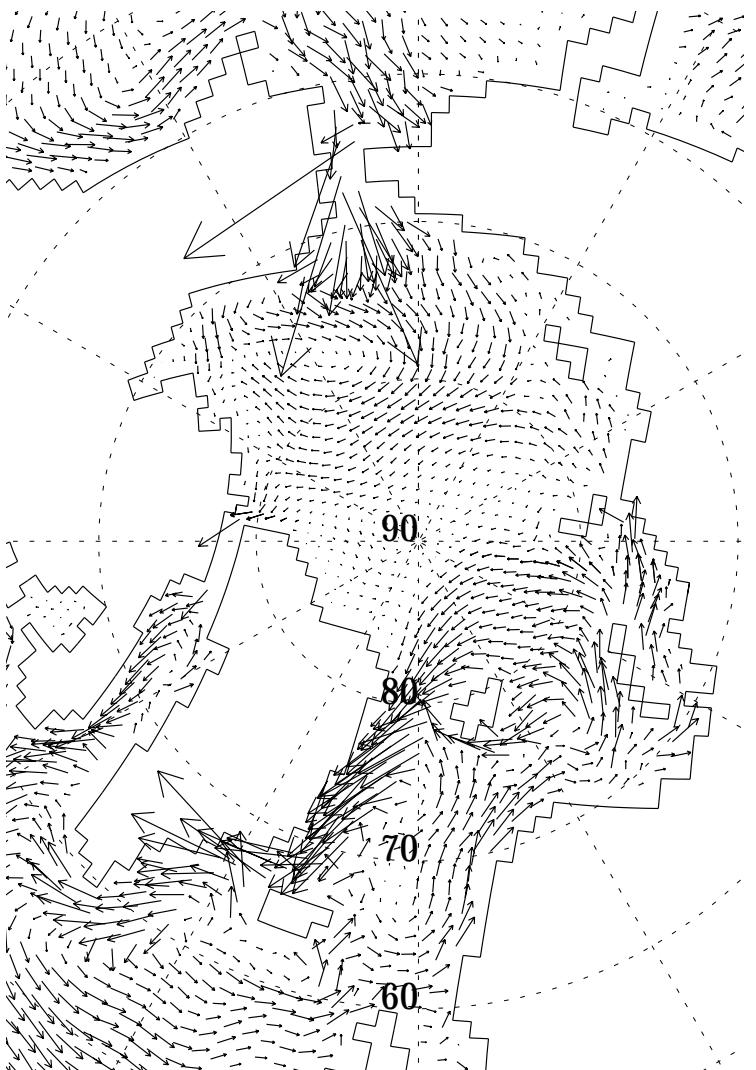


1978

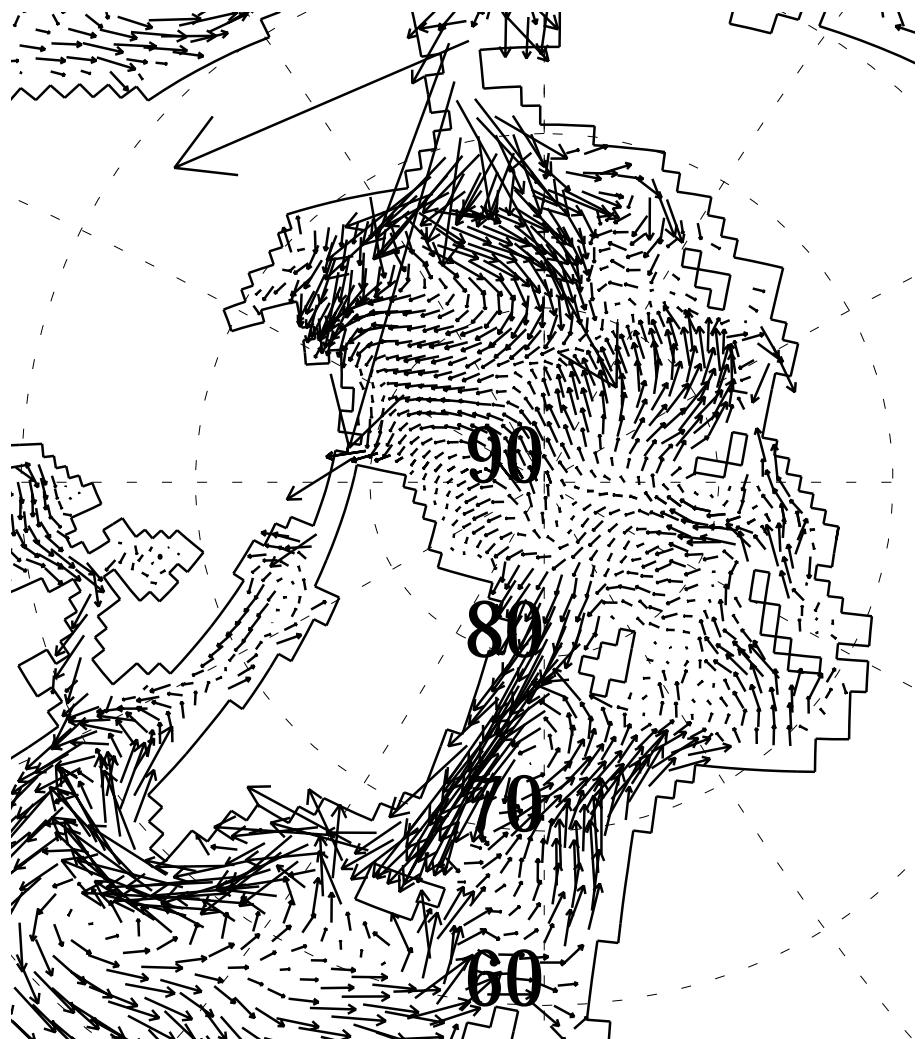


# Oceanic surface currents

March 1978

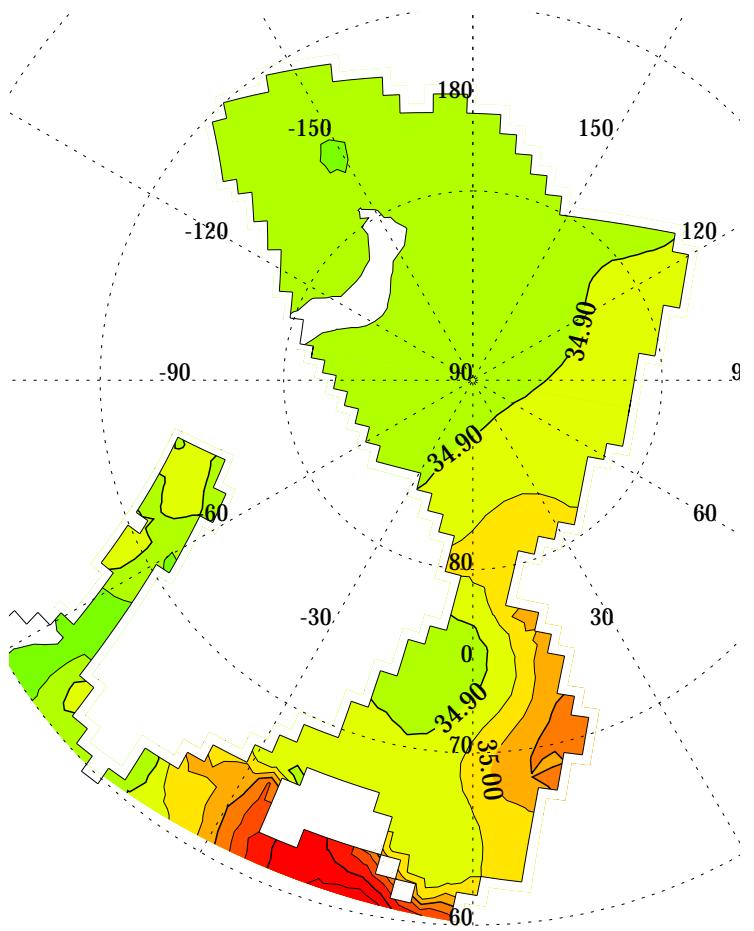


September 1978

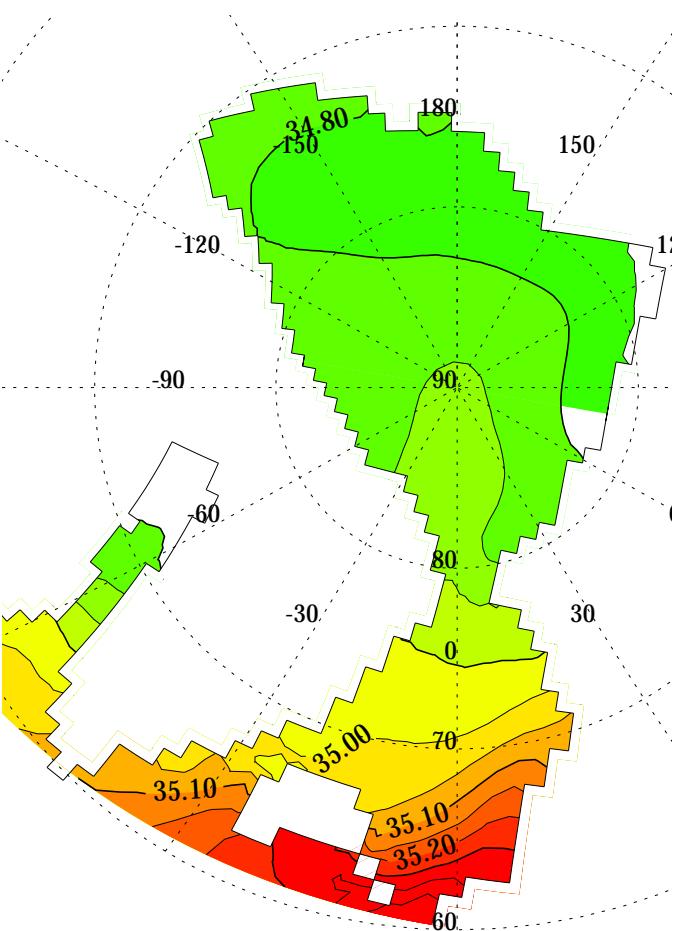


# Annual mean salinity at 500 m

1948



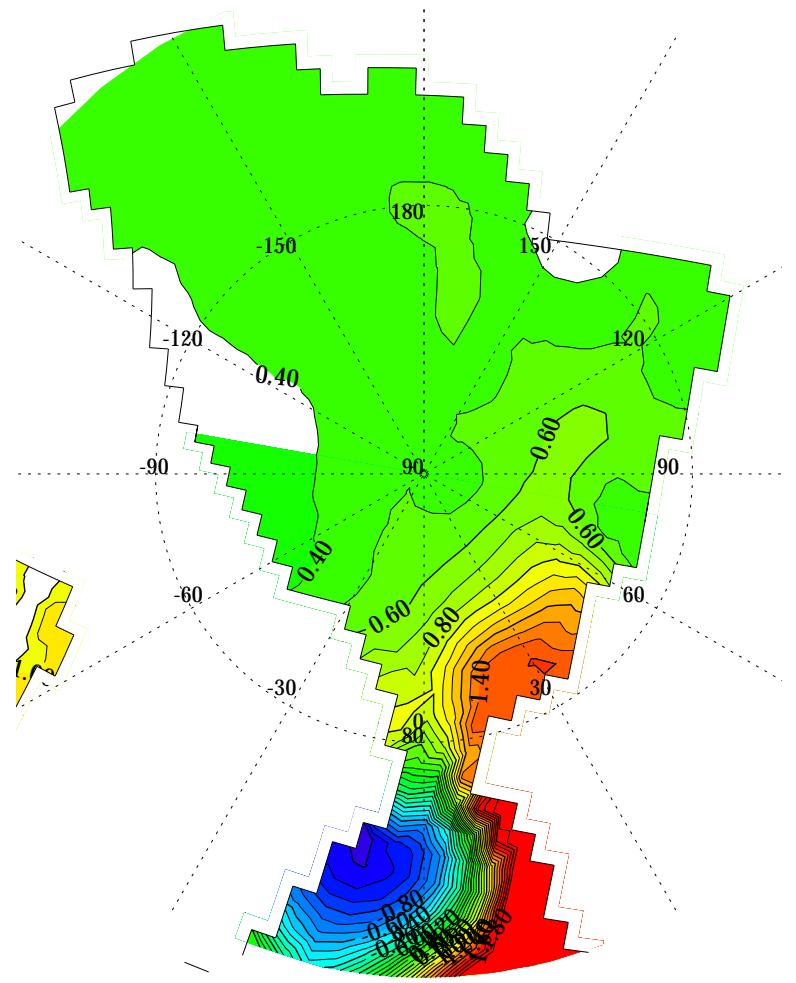
1978



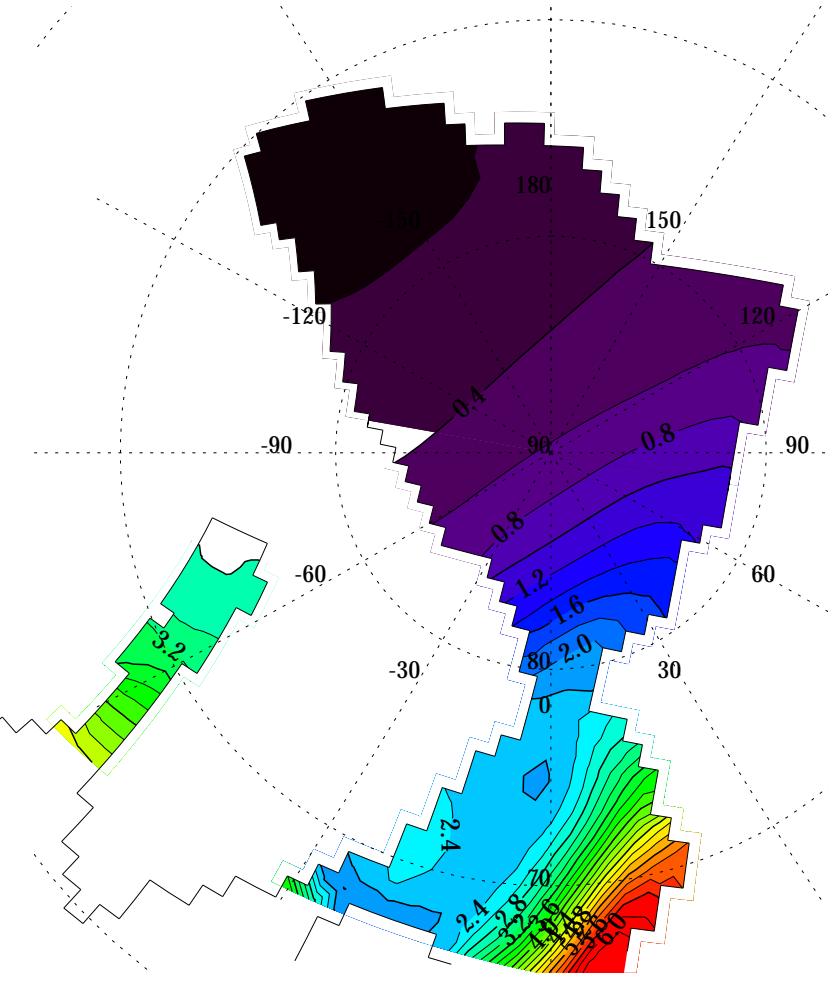
# Annual mean temperature at 500 m



1948



1978



# Oceanic currents at 500 m

1978

