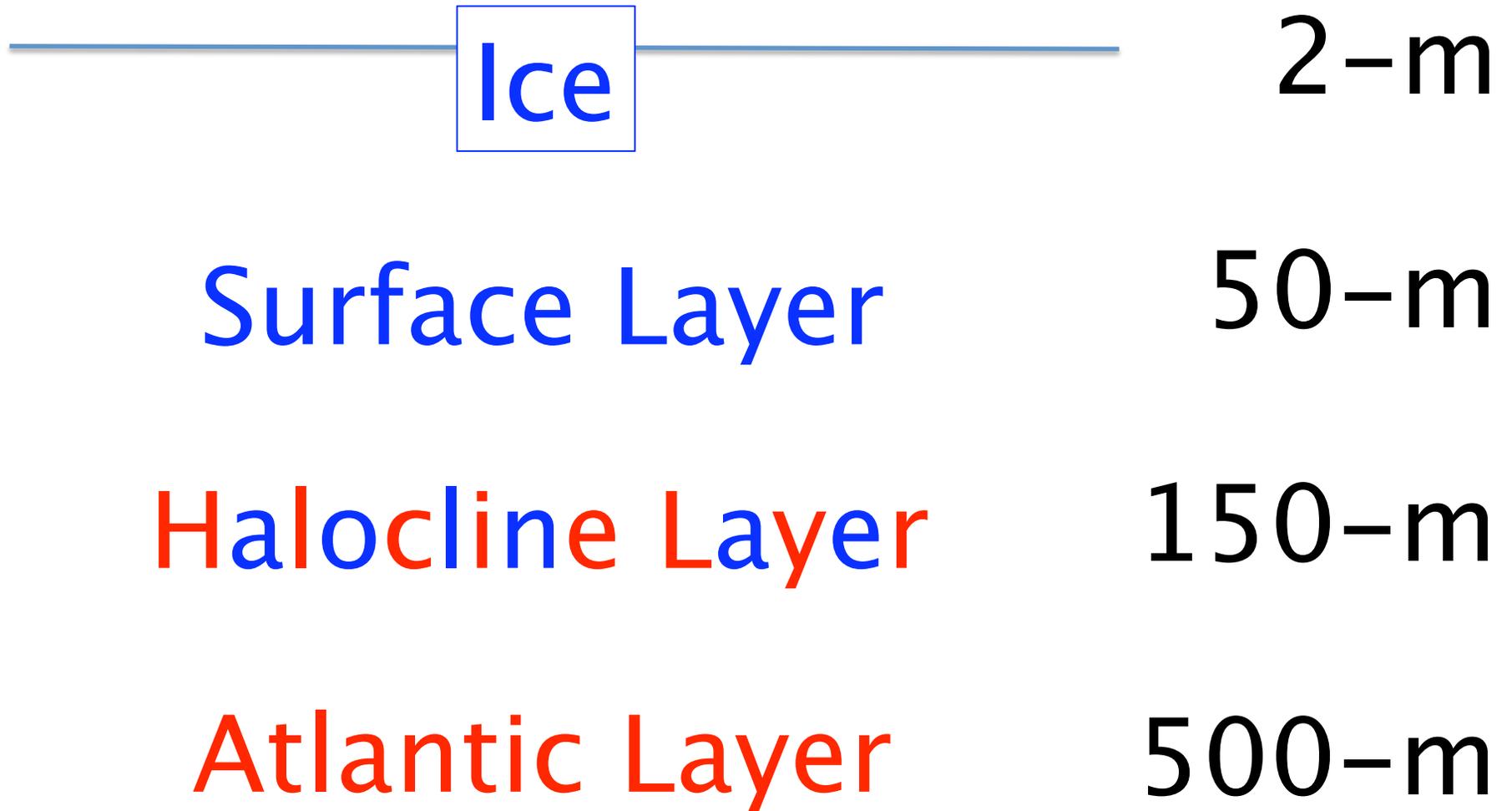


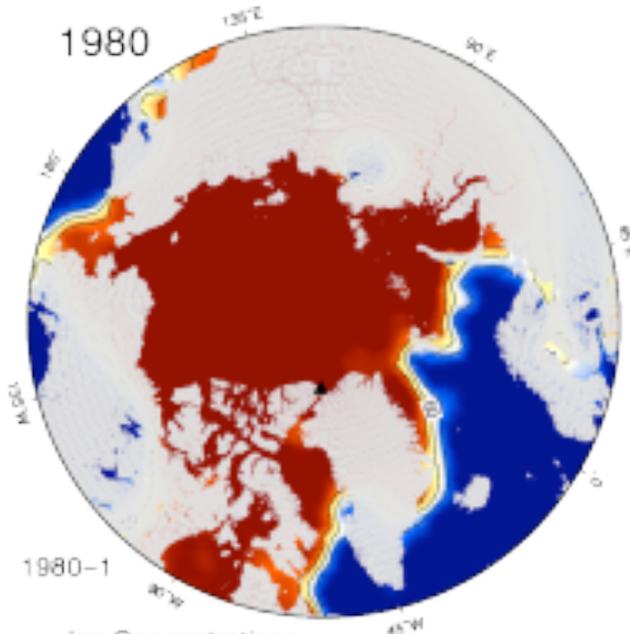
Map data ©2014 Google Imagery ©2014 T



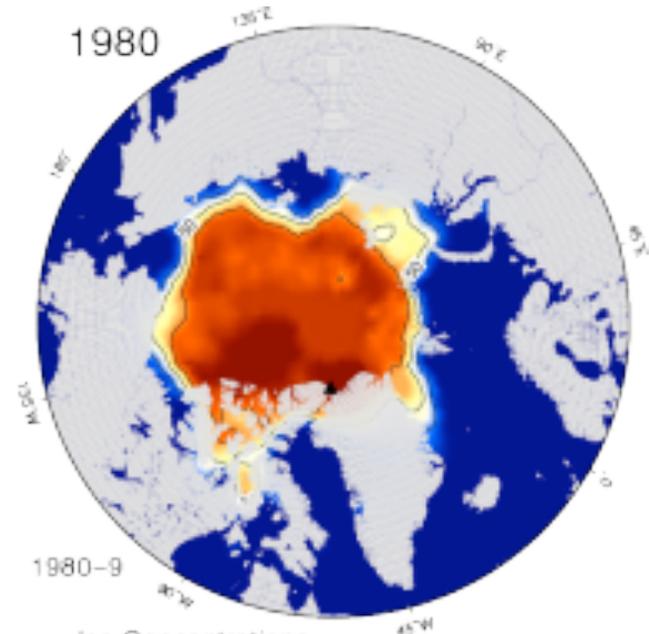
LandSat
Feb.-15, 2014



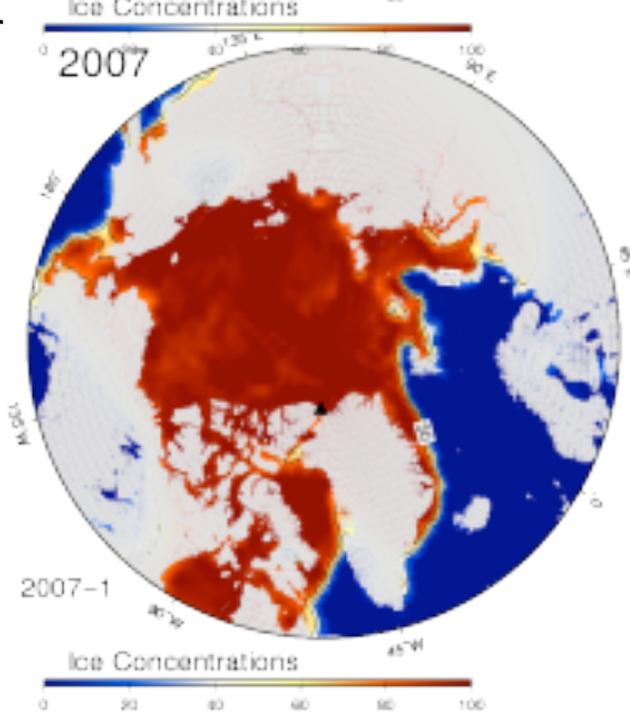
Winter



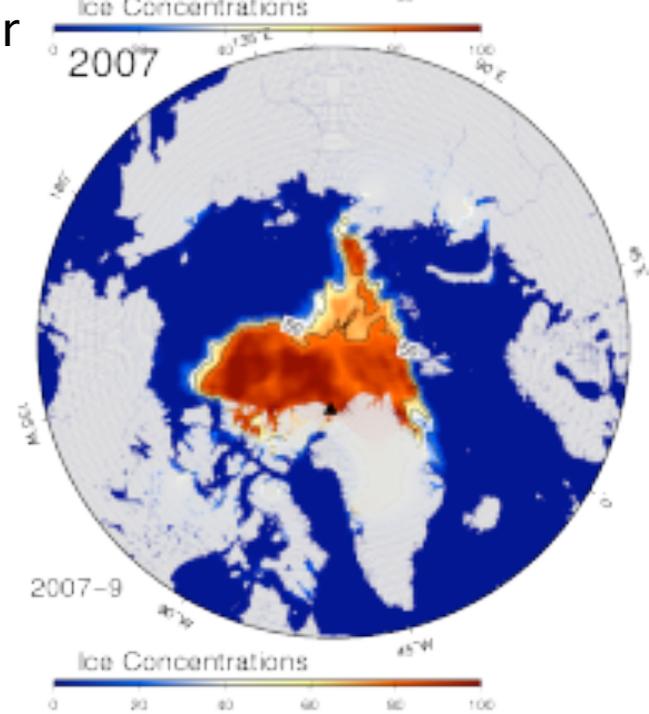
Summer



Ice Cover

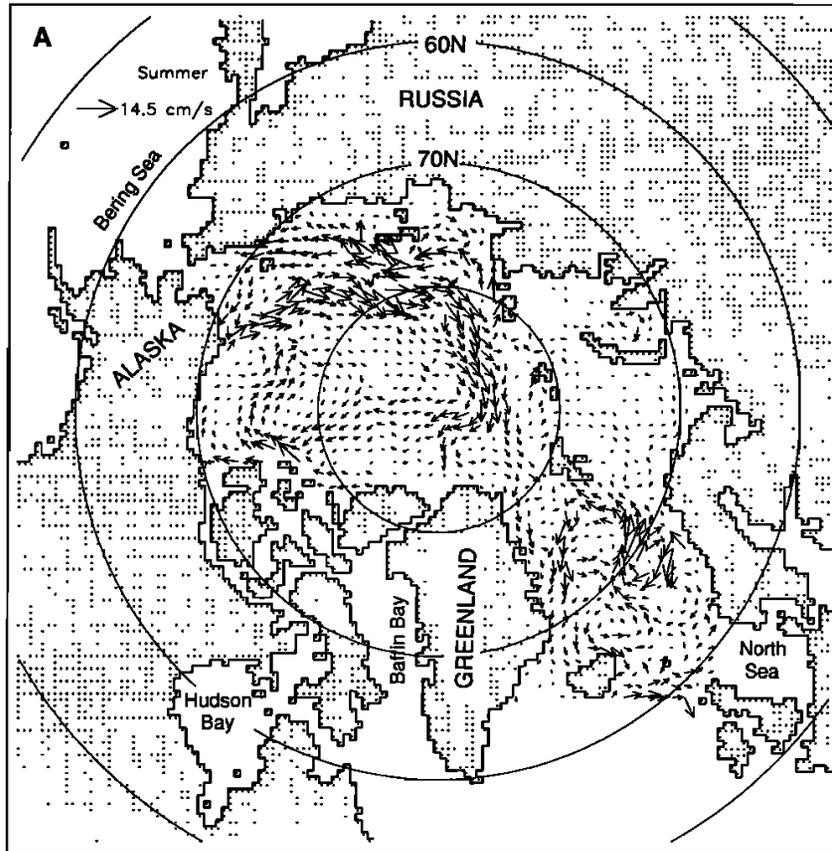


Ice Cover



Surface Circulation from T-S Observations

Summer



Winter

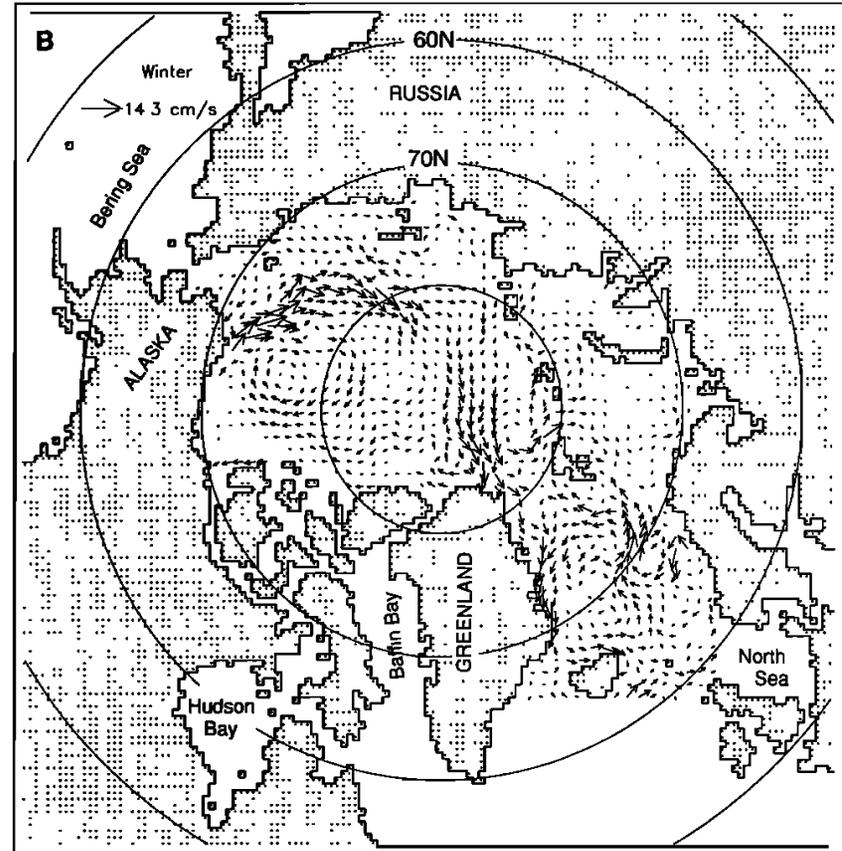
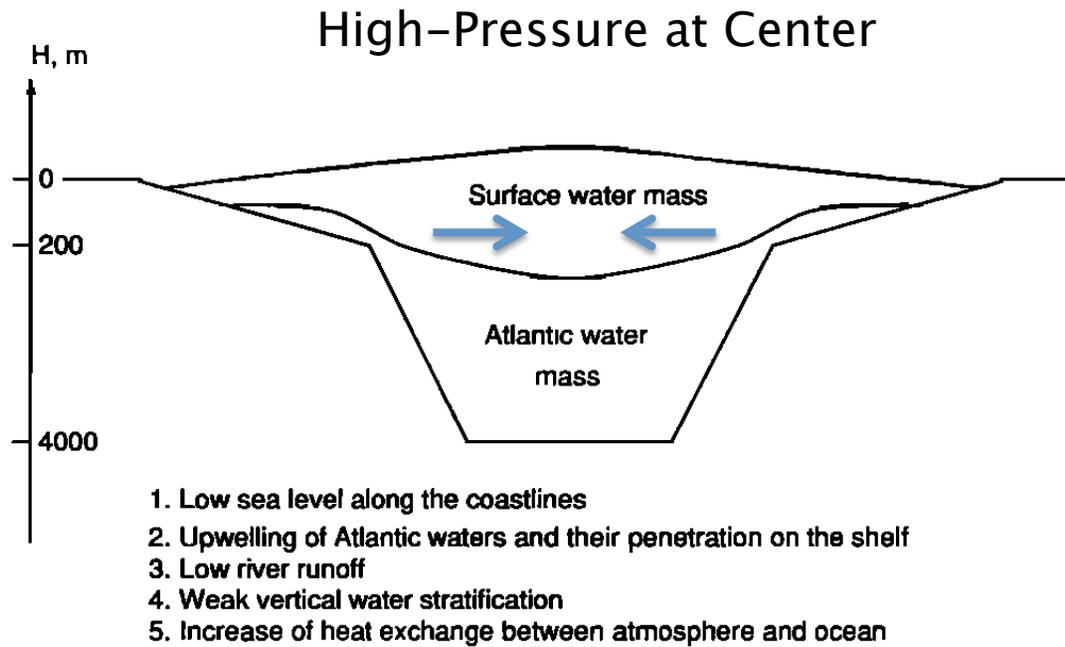


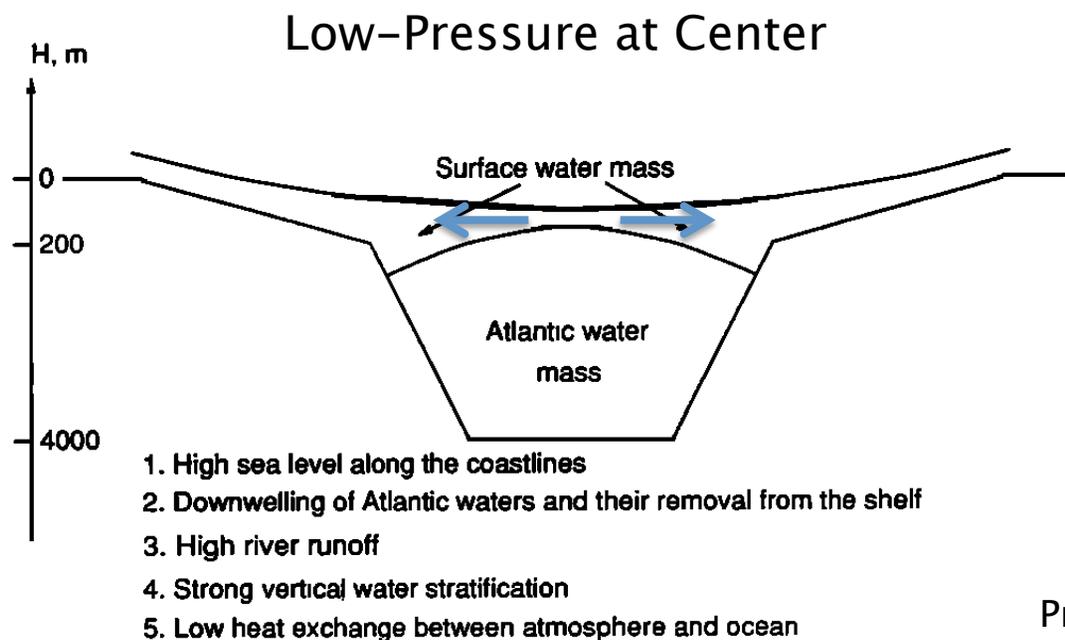
Figure 2. (a) Summer and (b) winter surface thermohaline circulation in the Arctic Ocean from the 3-D diagnostic model of *Polyakov and Timokhov* [1995]. The 3-D temperature and salinity fields were obtained from observations and were the only force generating motion.

Proshutinsky and Johnson (1997)

Wind-Forcing:



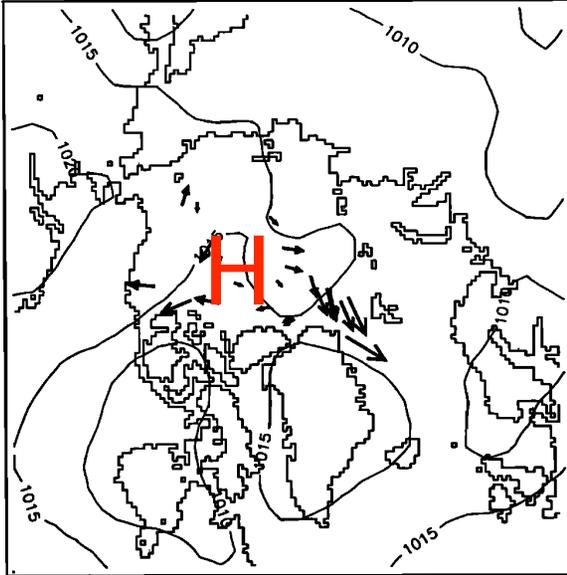
Convergent
Ekman Flux



Divergent
Ekman Flux

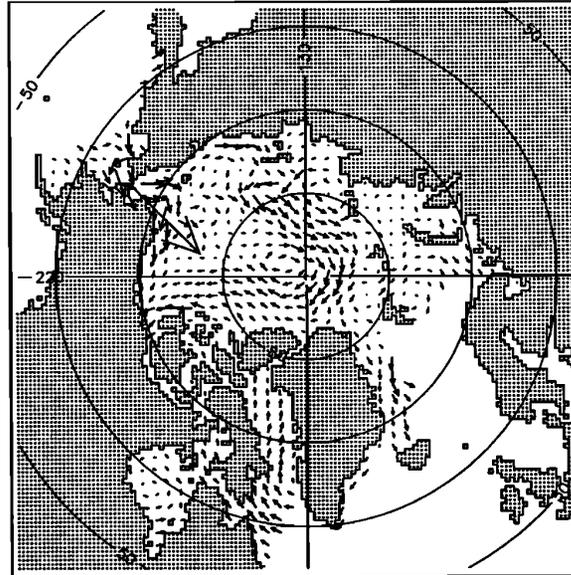
Observations

Maximum vector (cm/s) = 7



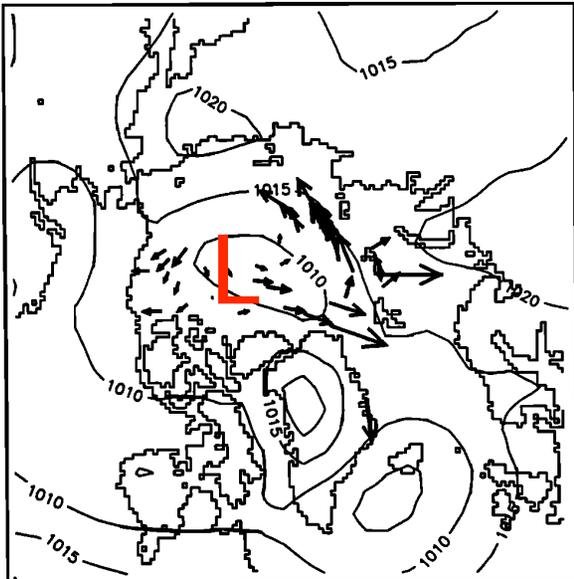
Model

Maximum vector (cm/s) = 59

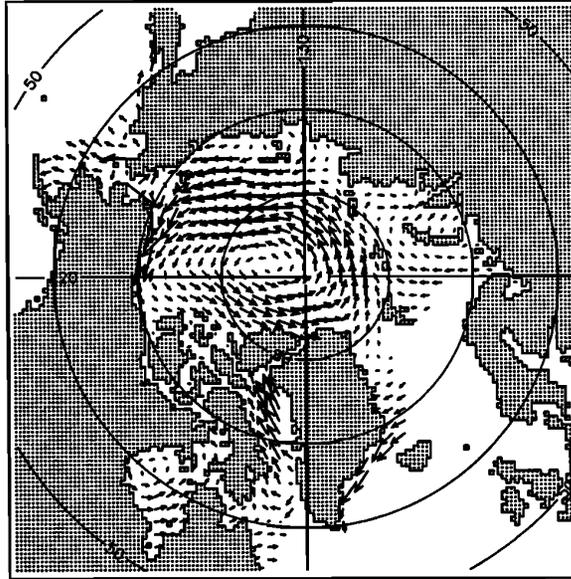


Convergent
Ekman Flux:
Anti-Cyclonic
(Aug.-1987)

Maximum vector (cm/s) = 9



Maximum vector (cm/s) = 41



Divergent
Ekman Flux:
Cyclonic
(Sept.-1992)

Sketch of Atlantic Layer Circulation 1963 from a few CTD casts

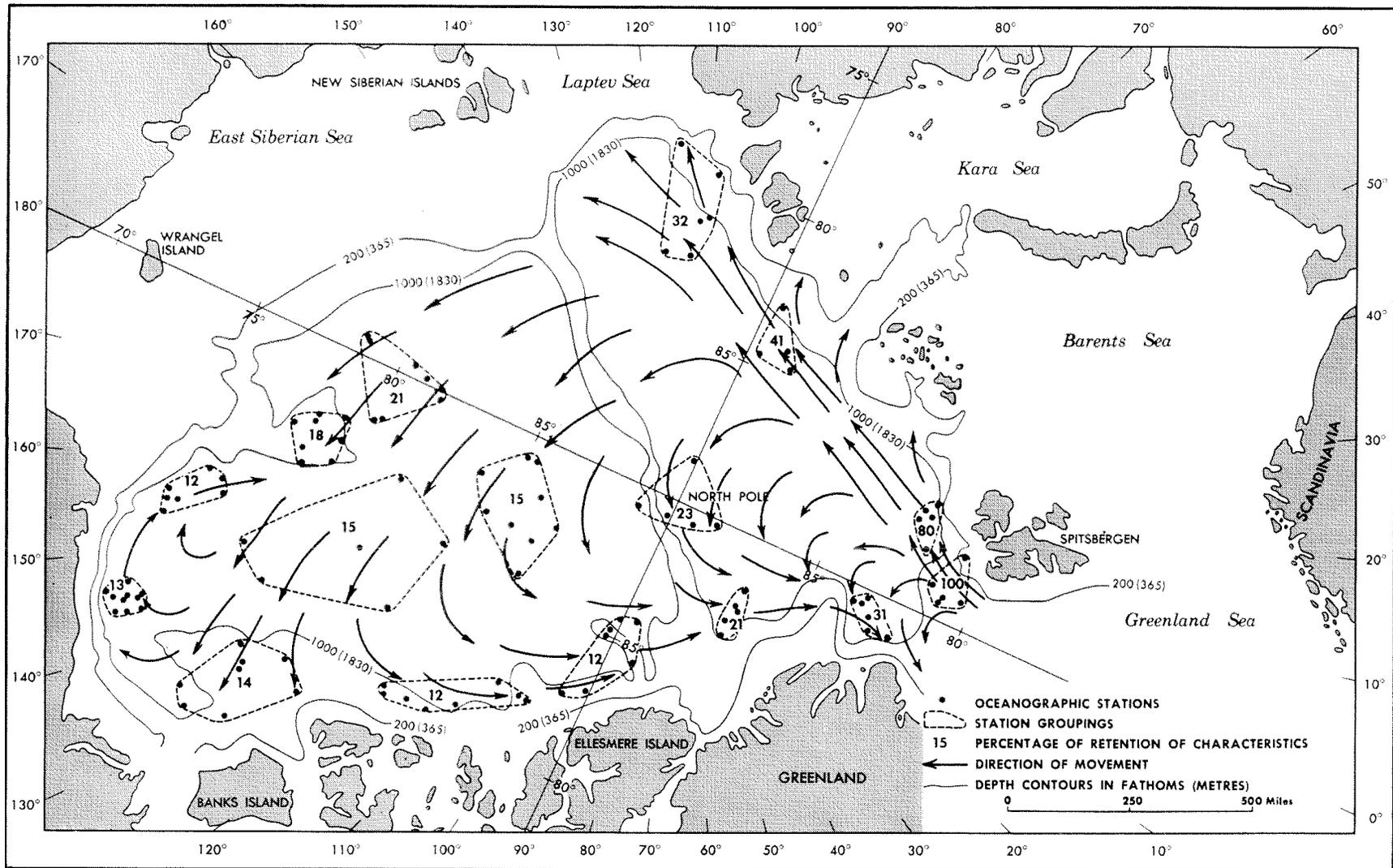


Fig. 3. Circulation of Atlantic water inferred from the percentage retention of characteristics.

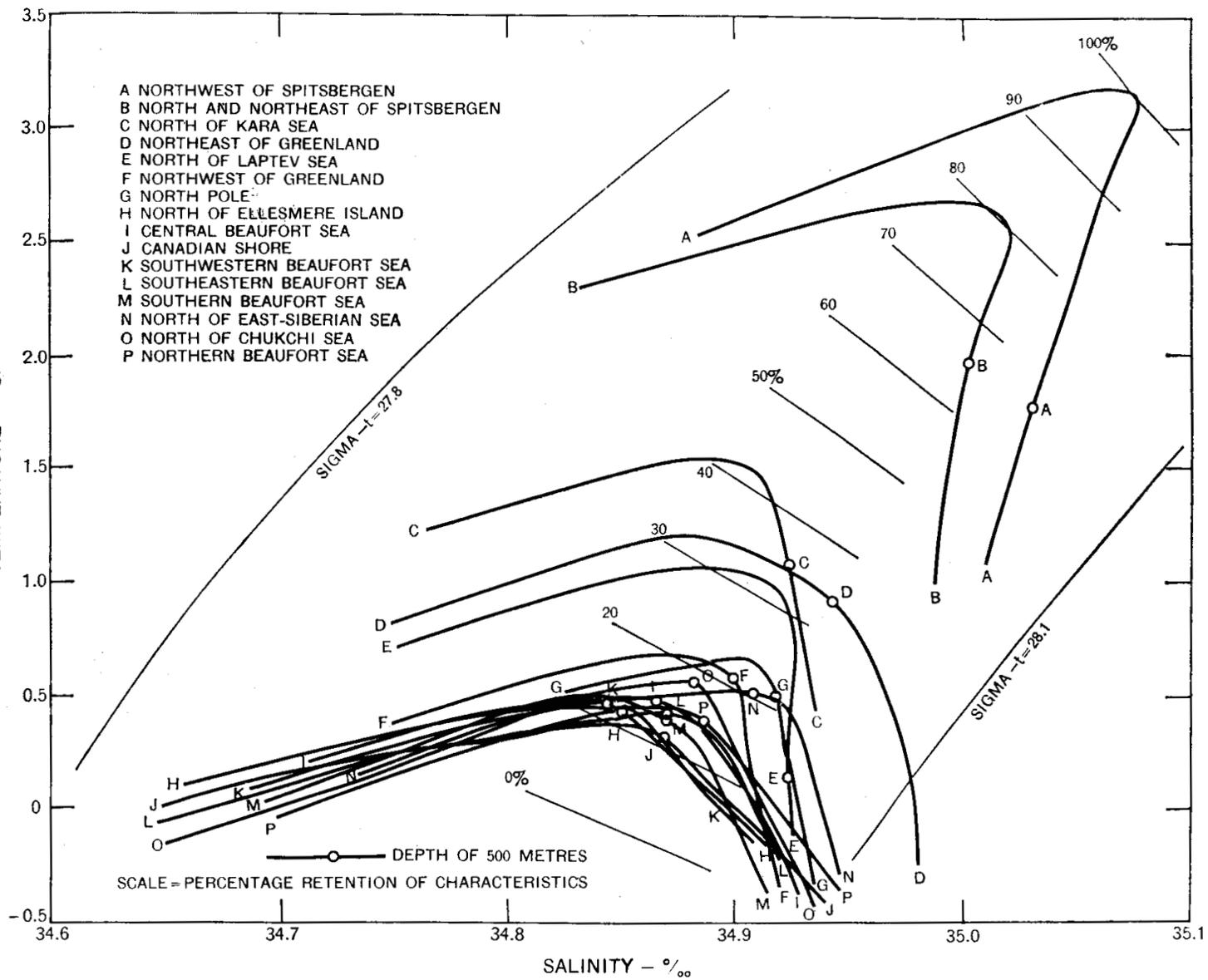
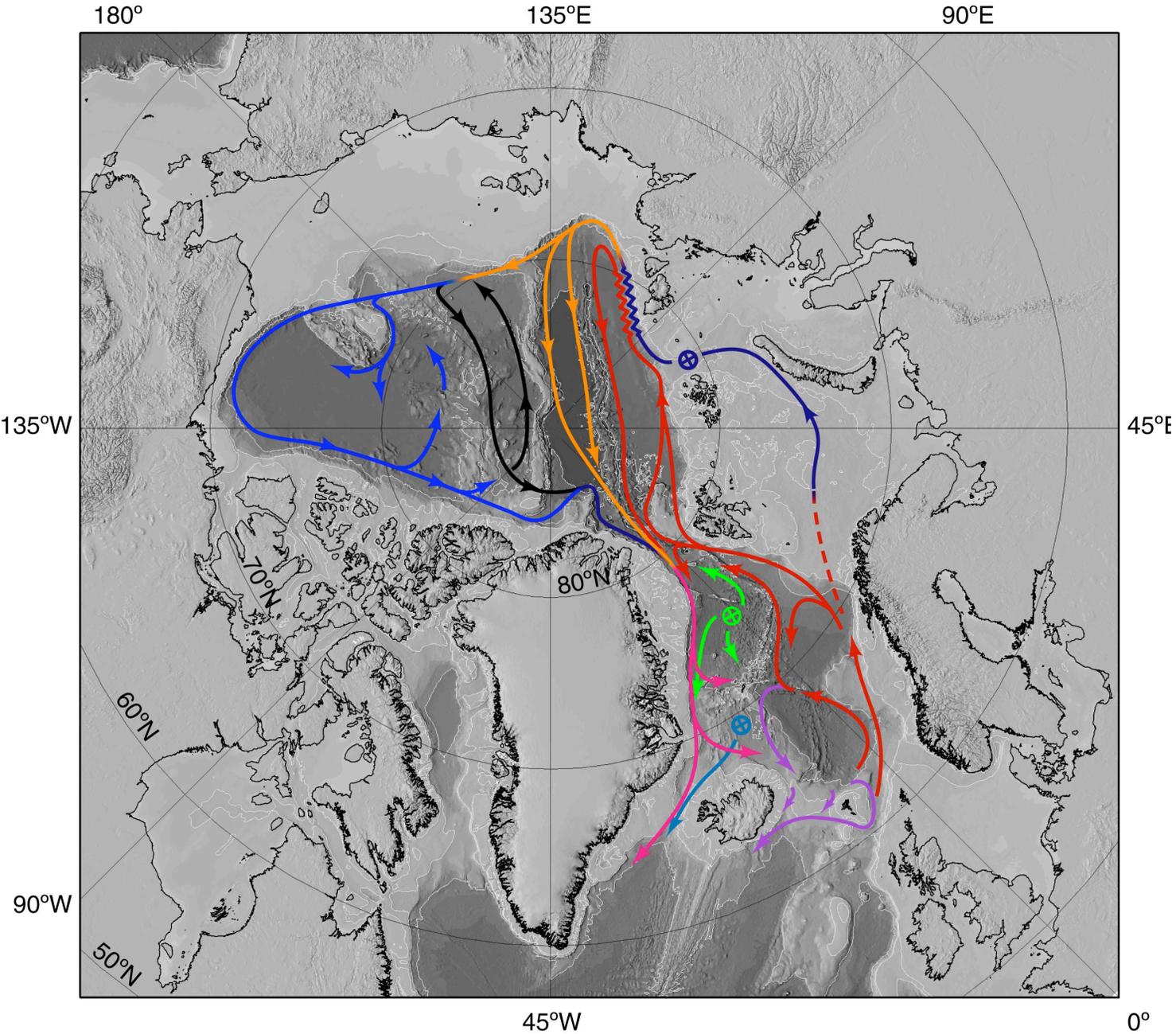


Fig. 2. Temperature-salinity diagram of averages of grouped stations. Groups are indicated in Fig. 3.

Sketch of Atlantic Layer Circulation 1994 from many CTD casts



Rudels (2012)

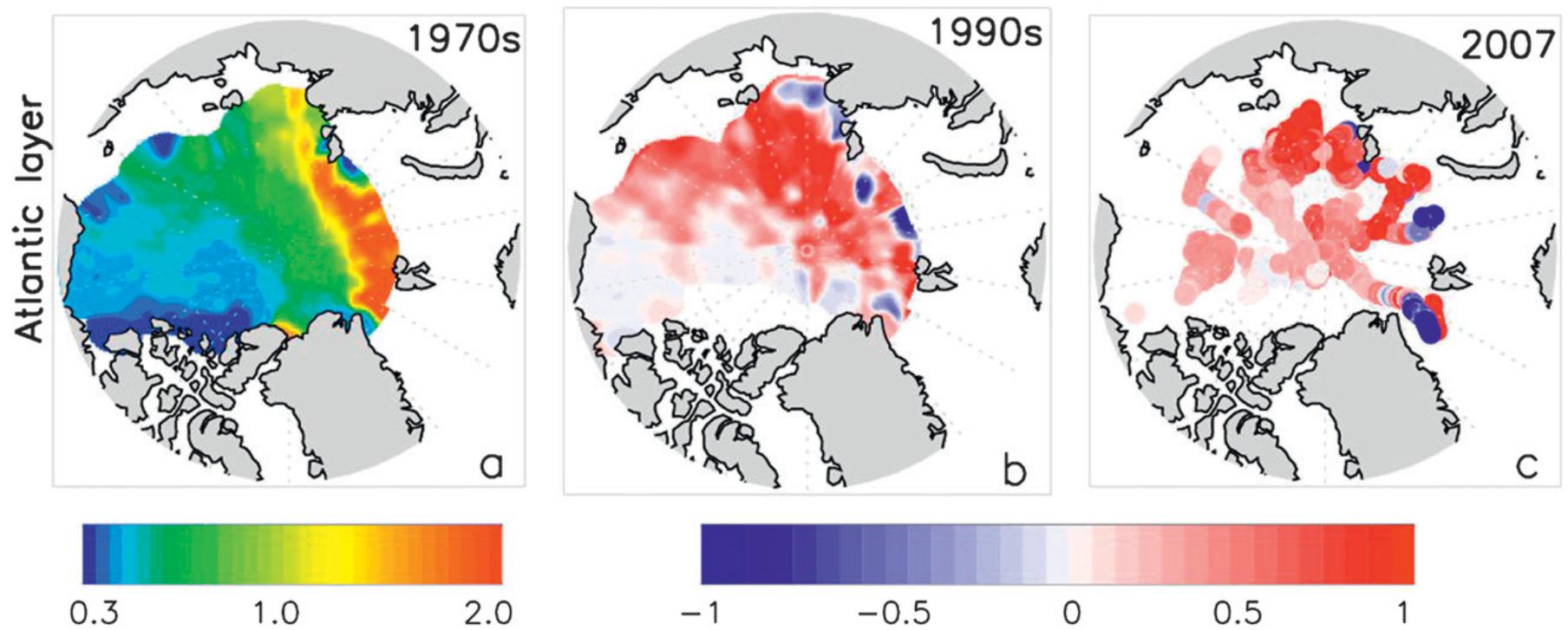
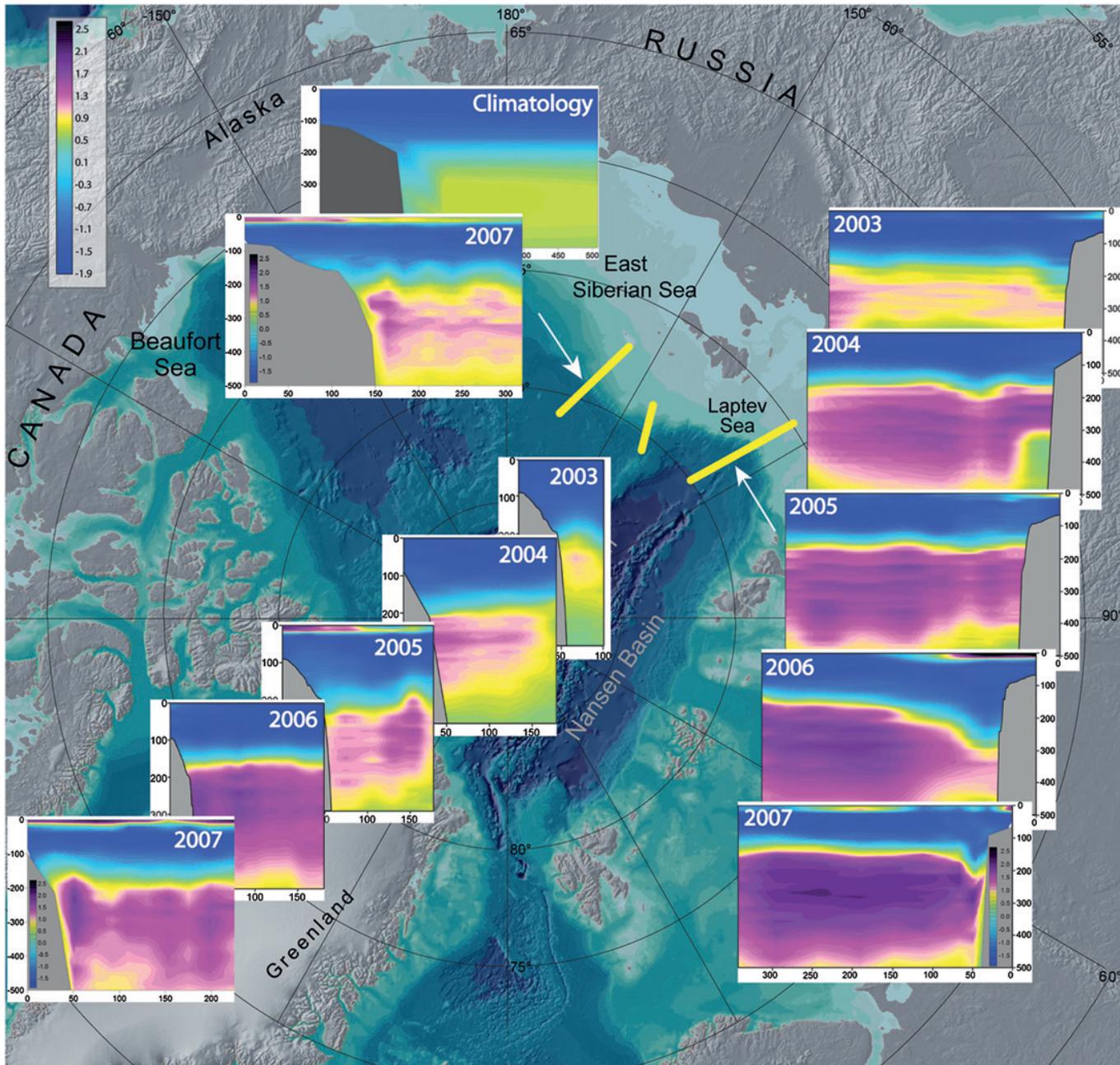


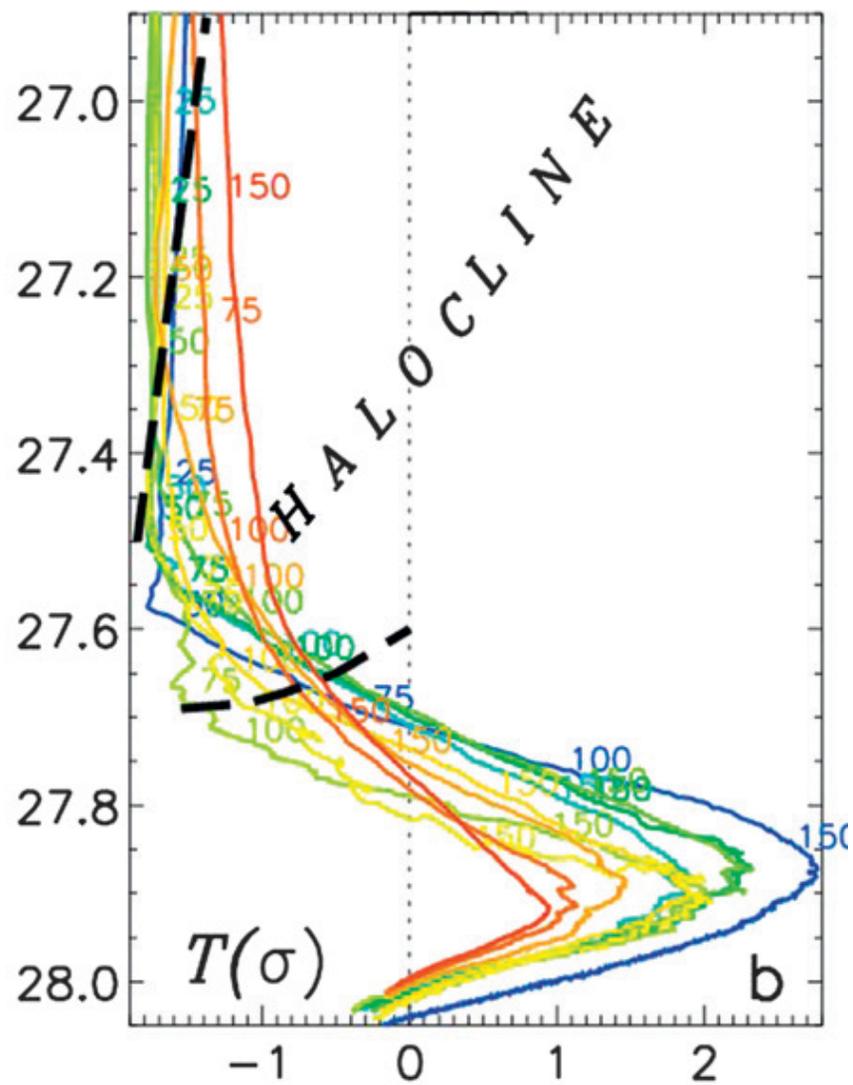
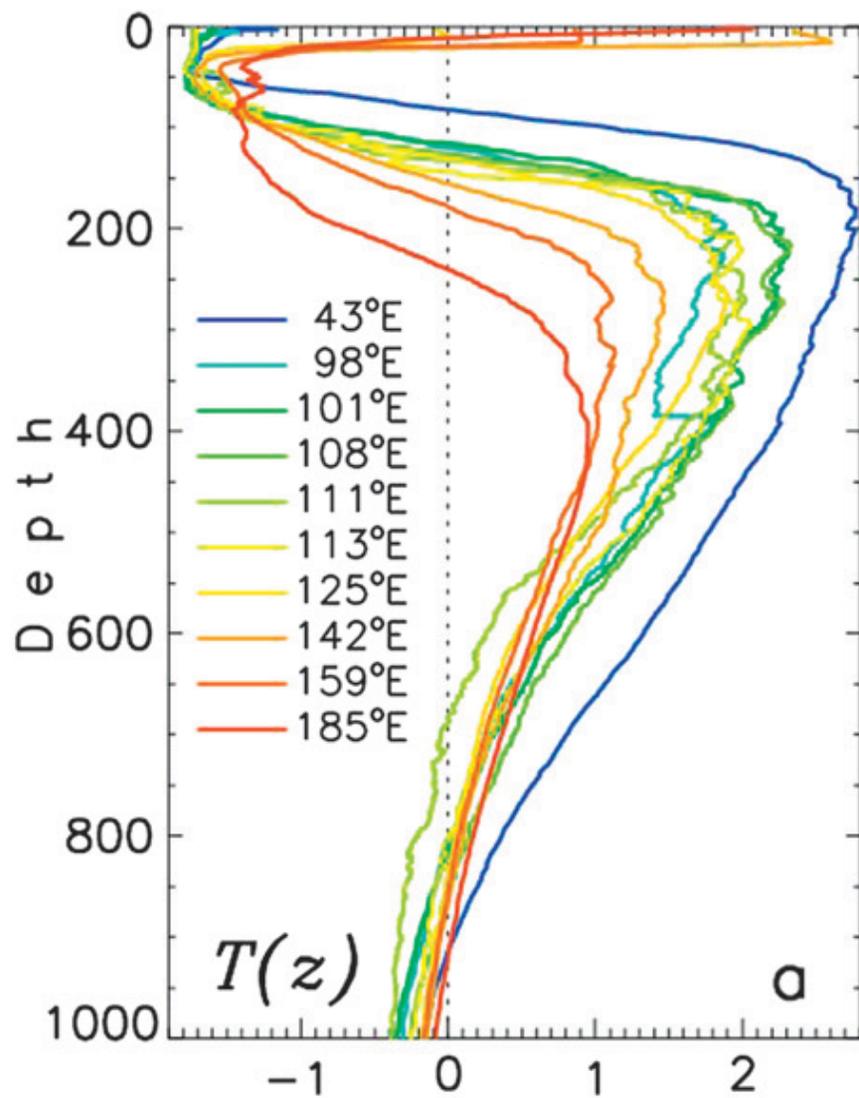
FIG. 2. (a) Mean AW temperature (°C) averaged over the 1970s; AW temperature (b) anomalies (°C) averaged over the 1990s and (c) for data from 2007. Anomalies are computed relative to climatology shown in (a).

Atlantic Layer Warming 2003-07

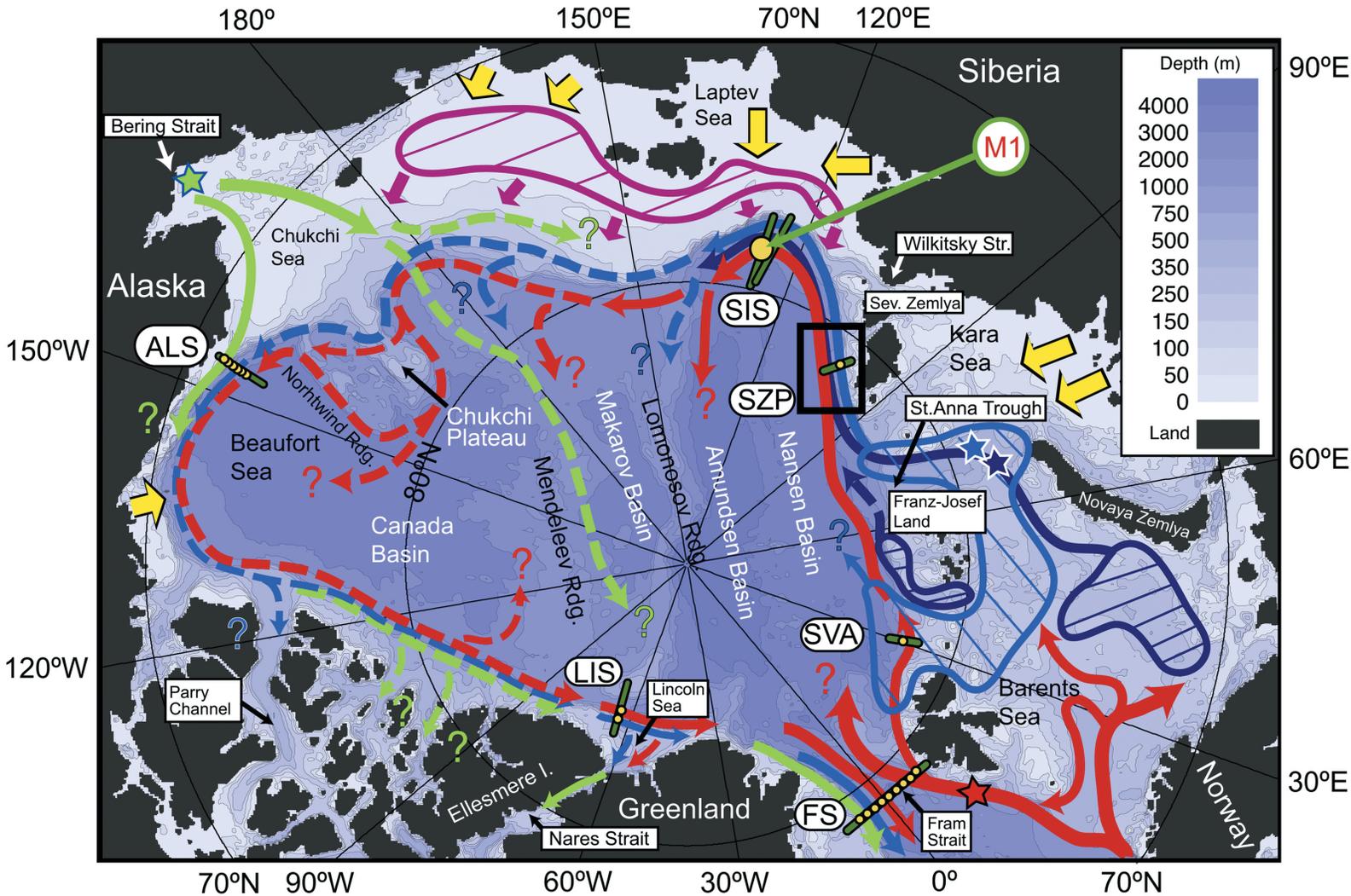


Polyakov et al. (2010)

Atlantic Layer Around the Arctic



Sketch of Atlantic Layer Circulation 2011 from Model

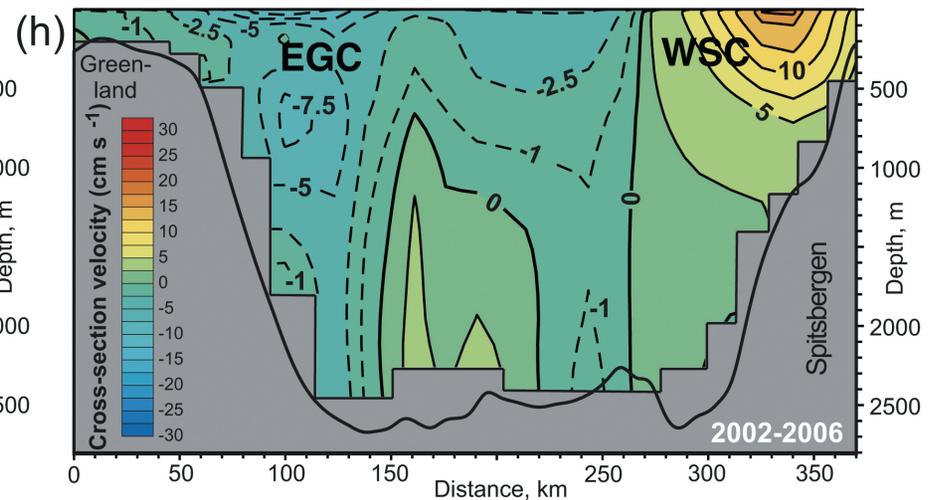
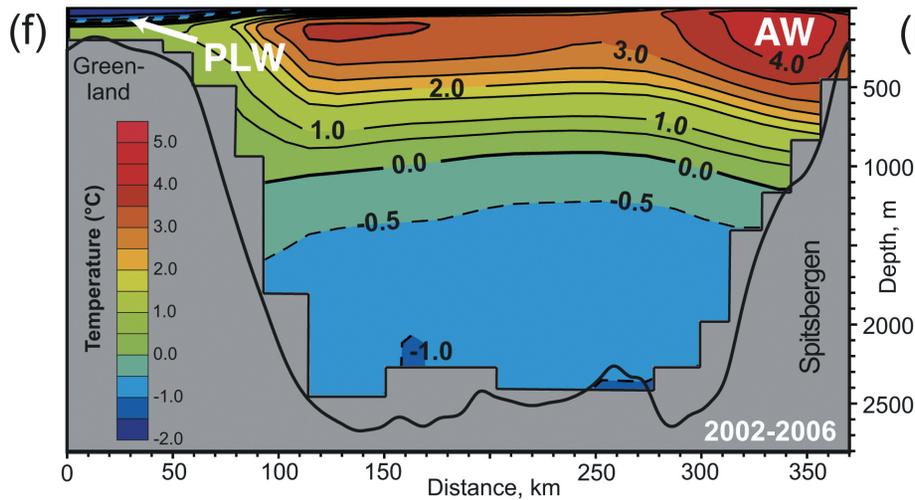
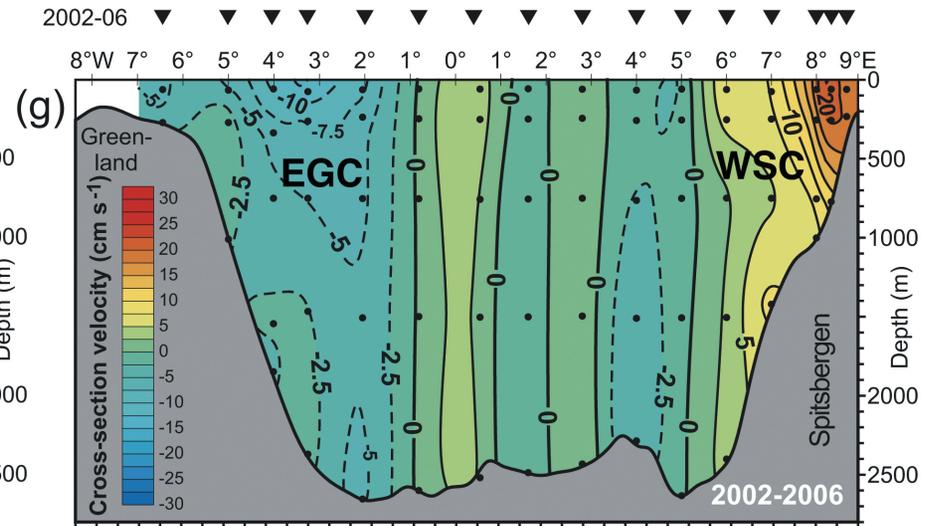
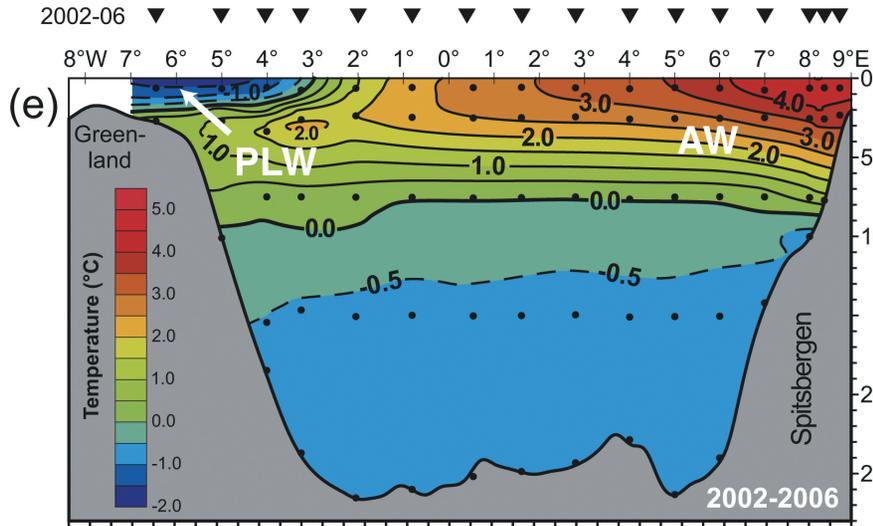


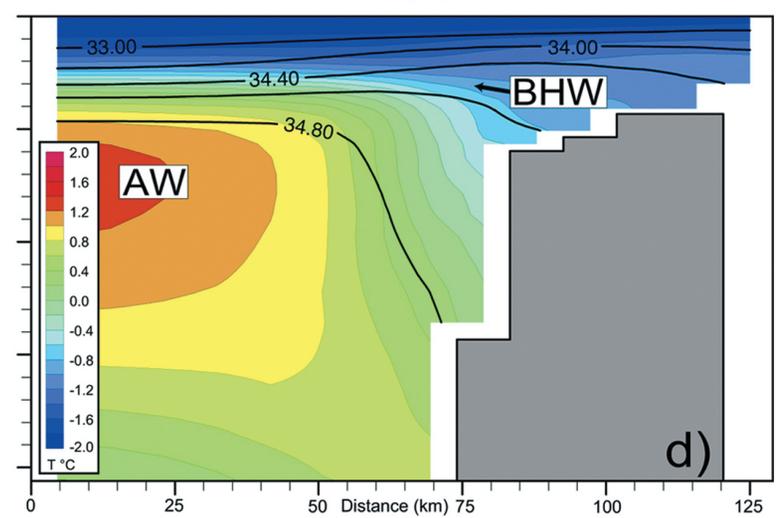
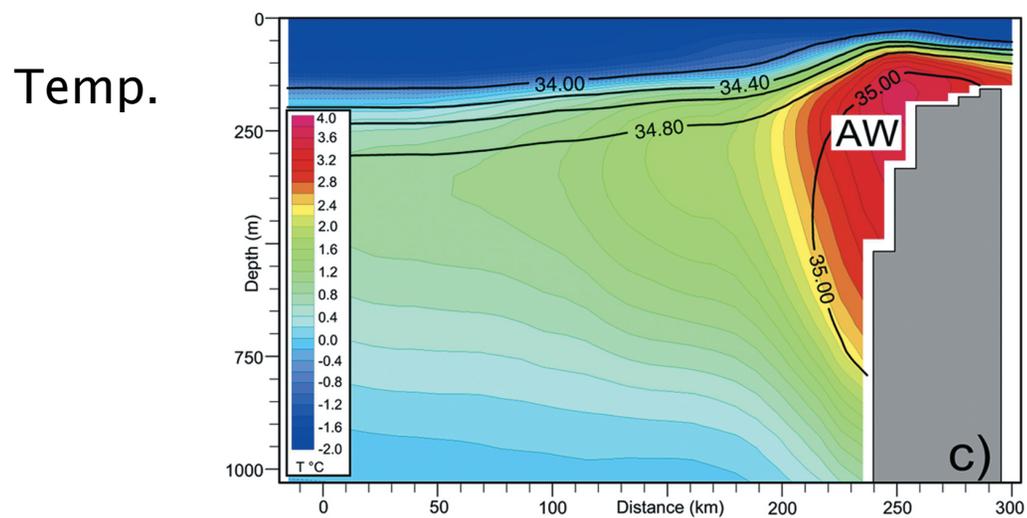
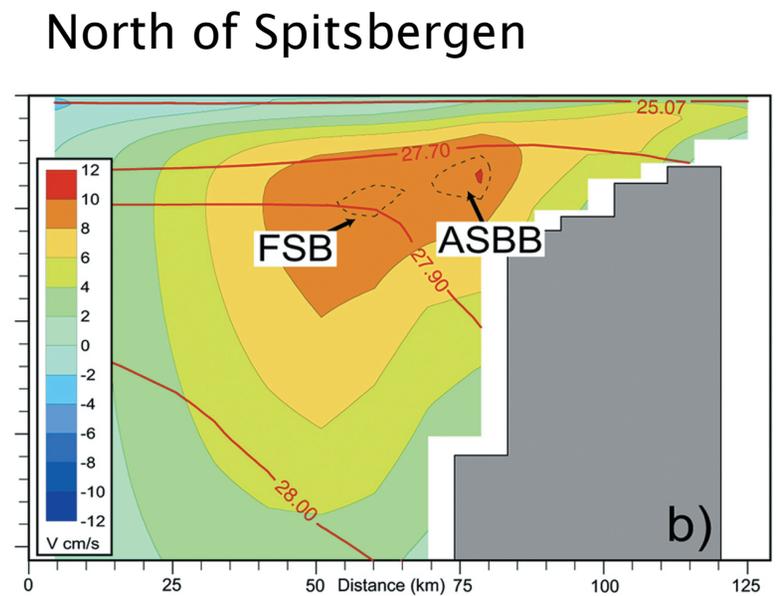
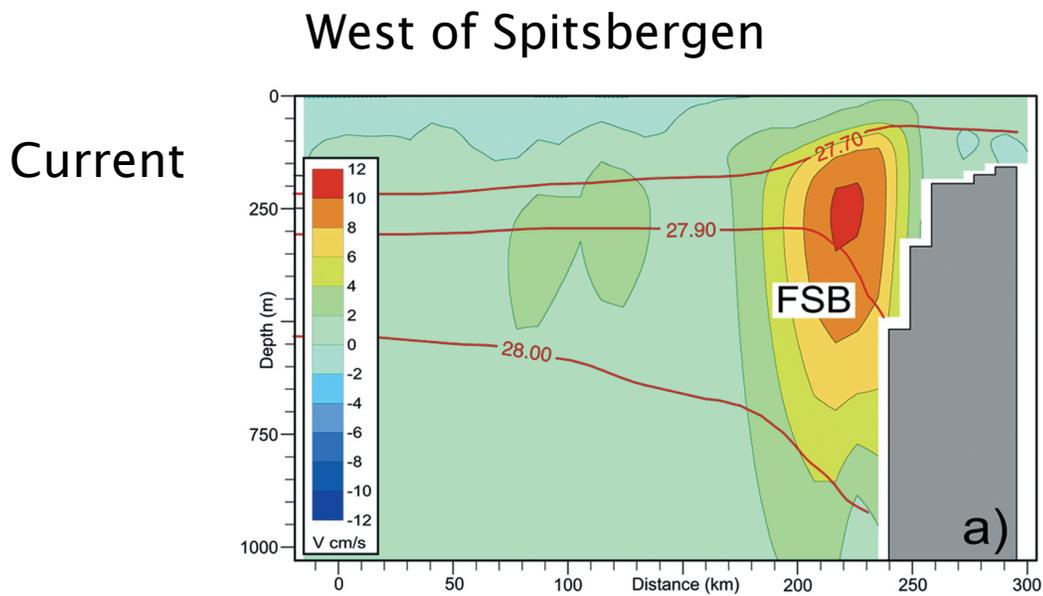
Aksenov et al. (2011)

Fram Strait: Model vs Observations 2002-08

Temperature

Currents



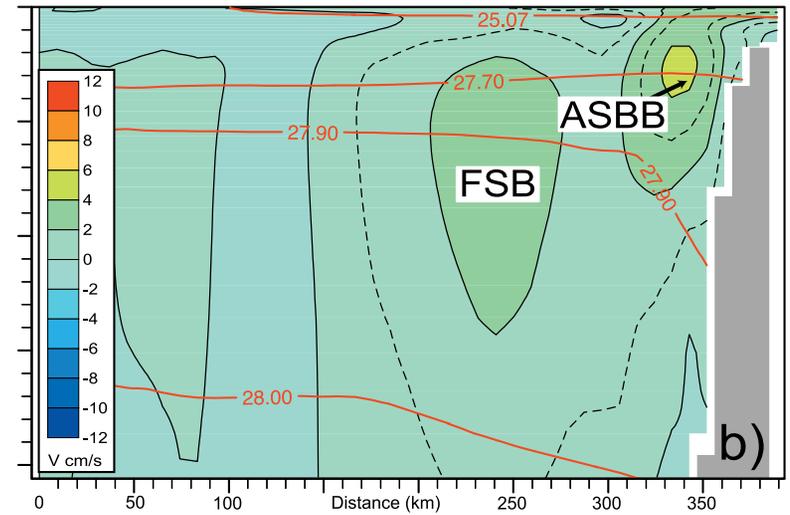
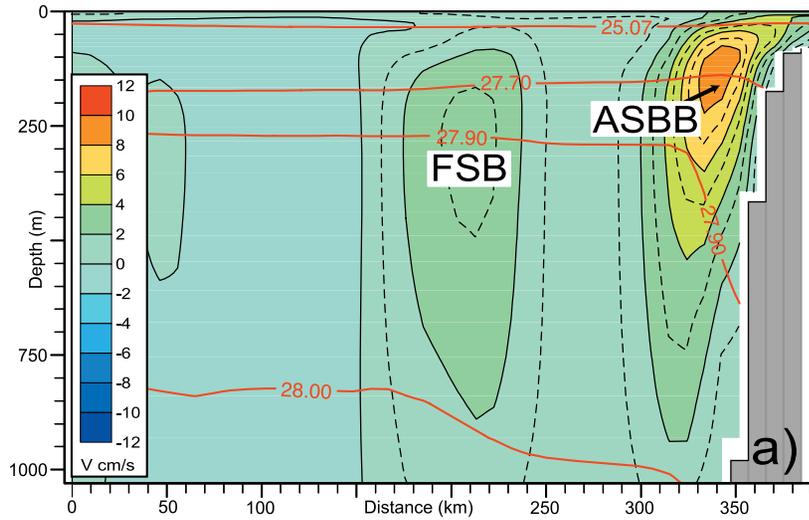


North of Laptev Sea (Siberia)

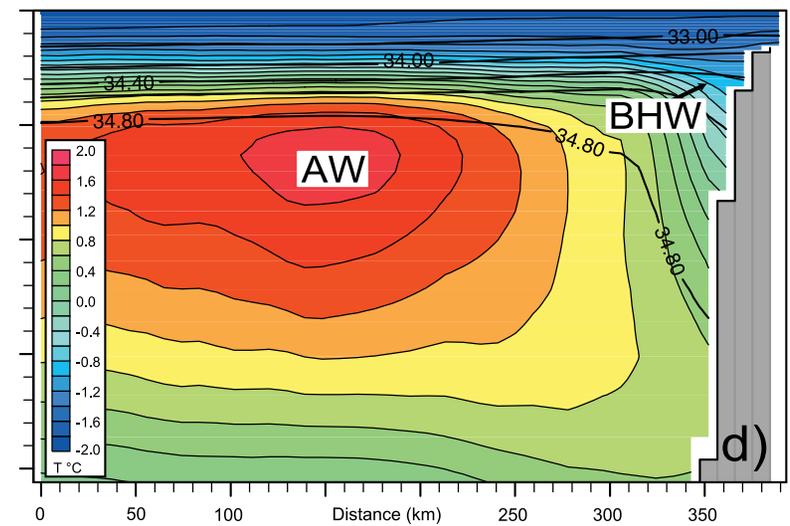
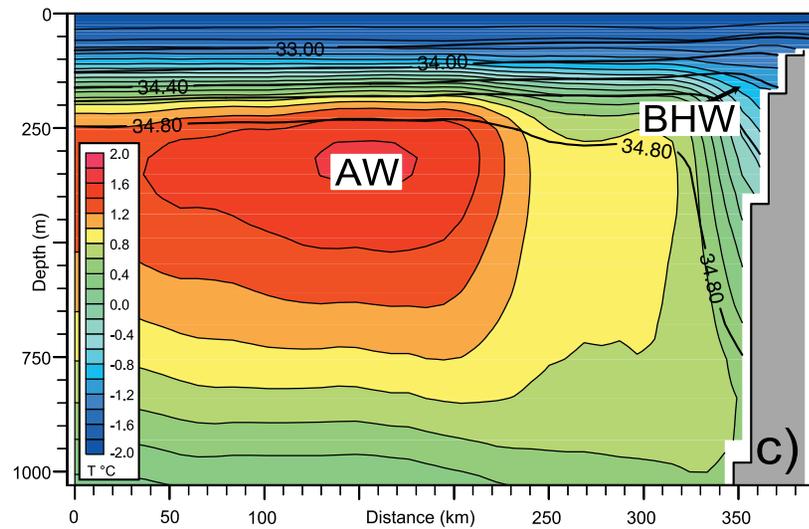
Winter

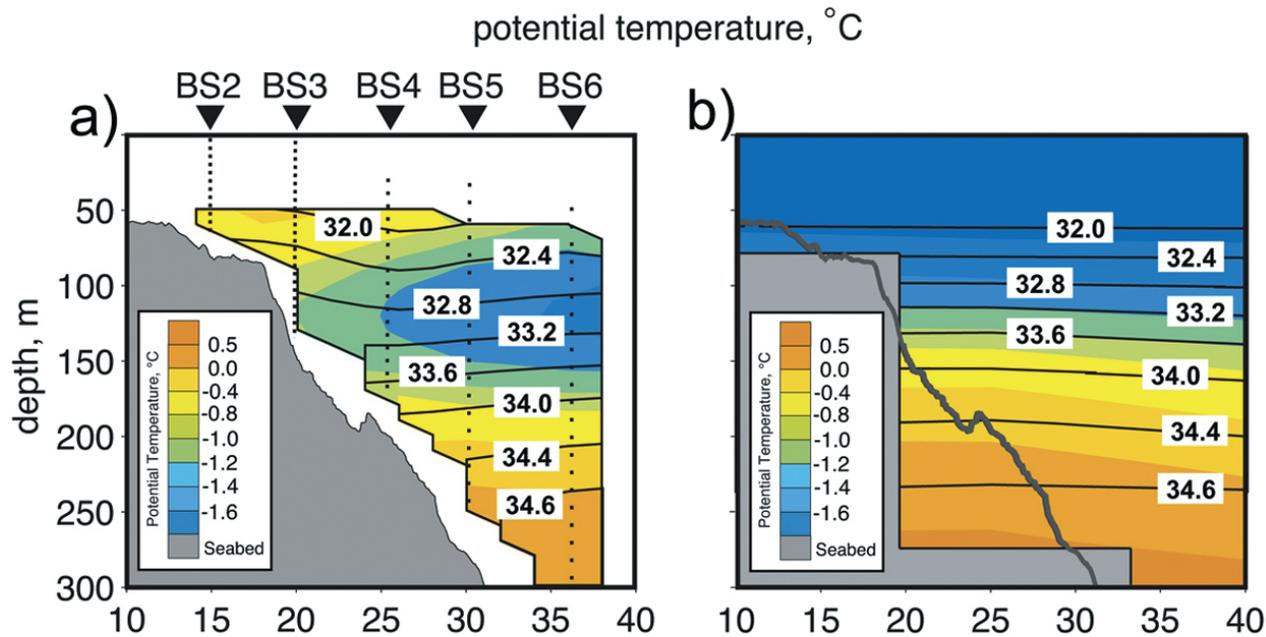
Summer

Current



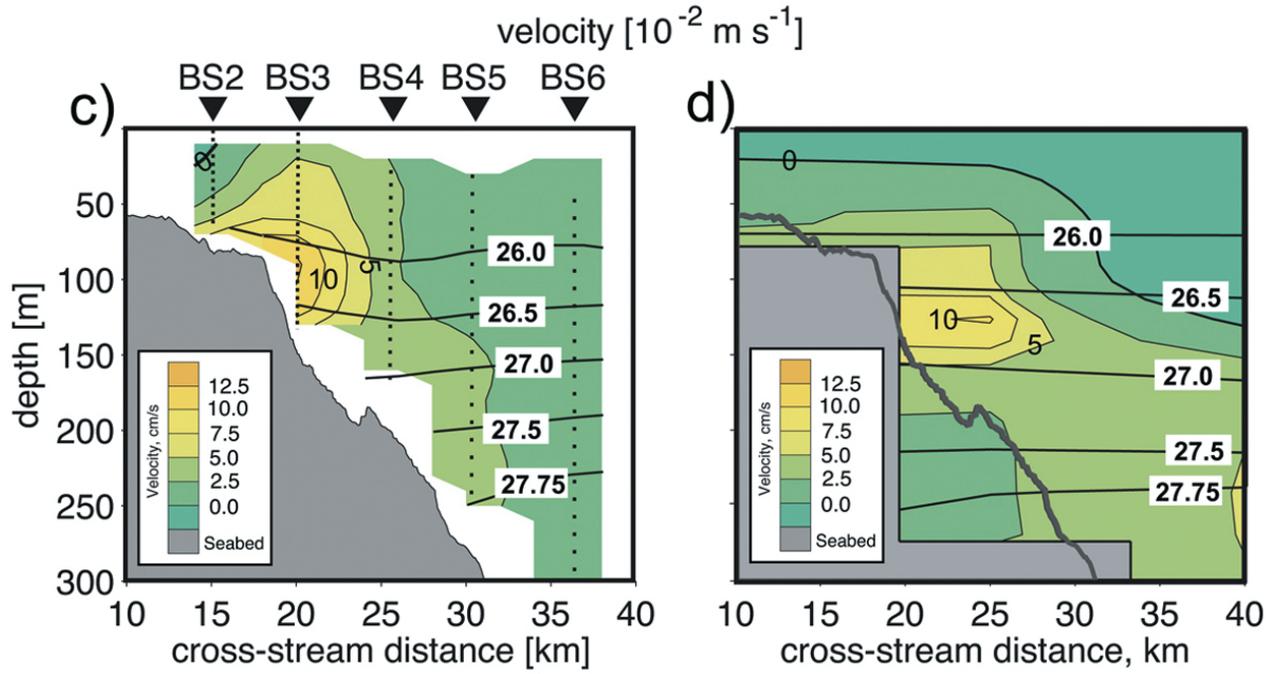
Temp.





Beaufort Sea

Salinity and Temperature



Density and Current

Data

Model

Aksenov et al. (2011)

Beaufort Slope Currents 2003

Bottom-intensified

