Polar oceanography GEOF338
Reading list spring 2017, Geophysical Institute, UiB

Course responsible: Professor Lars H. Smedsrud
Partly taught by: Post Doctor Marius Årthun

Book:

Sea Ice (edited by: Thomas, D.N. and Dieckmann, G.S.)

- Chapters 1 – 4
- These section are 'nice to know' only:
  1.5 Astro biology, 2.3 Desalination and pore microstructure, 2.4 Physical properties (Radiative transfer, Dielectric properties, Macroscopic properties), 4.3 Measurement techniques (Electromagnetic induction)

Compendium:

Ice formation and convection – a one dimensional model
(Darelius et al, 2016) 9 pages + manual and exercises

Dense Overflows and Plume Dynamics (Darelius 2008)

- 11 pages + exercises

Reports:

Antarctic climate change and the environment (Turner et al 2009, SCAR)

- Chapter 1.1 – 1.5. (pages 1-20).

Articles:

Toward quantifying the increasing role of oceanic heat in the sea ice loss in the new Arctic (Carmack et al, 2015)

Thermohaline Circulation in the Arctic Mediterranean Seas, (Aagaard et al. 1985)

Ice-ocean processes over the continental shelf of the southern Weddell Sea, Antarctica, (Nicholls et al. 2009)

Marginal thermobaric stability in the ice-covered upper ocean over Maud Rise (McPhee 2000) + Figures/discussion from (Akitomo 1999)

The large-scale freshwater cycle of the Arctic (Serreze et al. 2006)

Dense water formation and circulation in the Barents Sea (Årthun et al. 2010)

Retreat of the cold halocline layer in the Arctic Ocean (Steele and Boyd 1998)

Turbulent exchange coefficients for the ice/ocean interface … (Sirevaag 2009)

The Amundsen Sea and the Antarctic Ice Sheet, (Jakobs et al, 2012)

Closure of the meridional overturning circulation through Southern Ocean upwelling, (Marshall & Speer 2012)