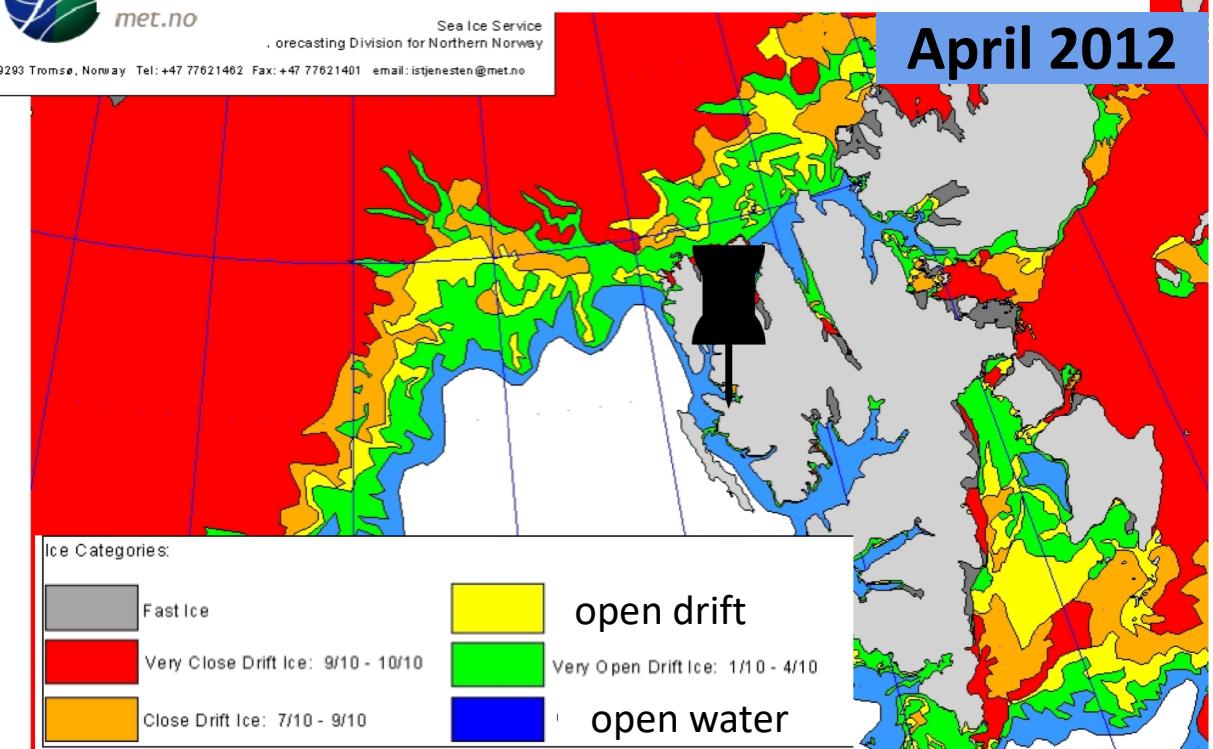
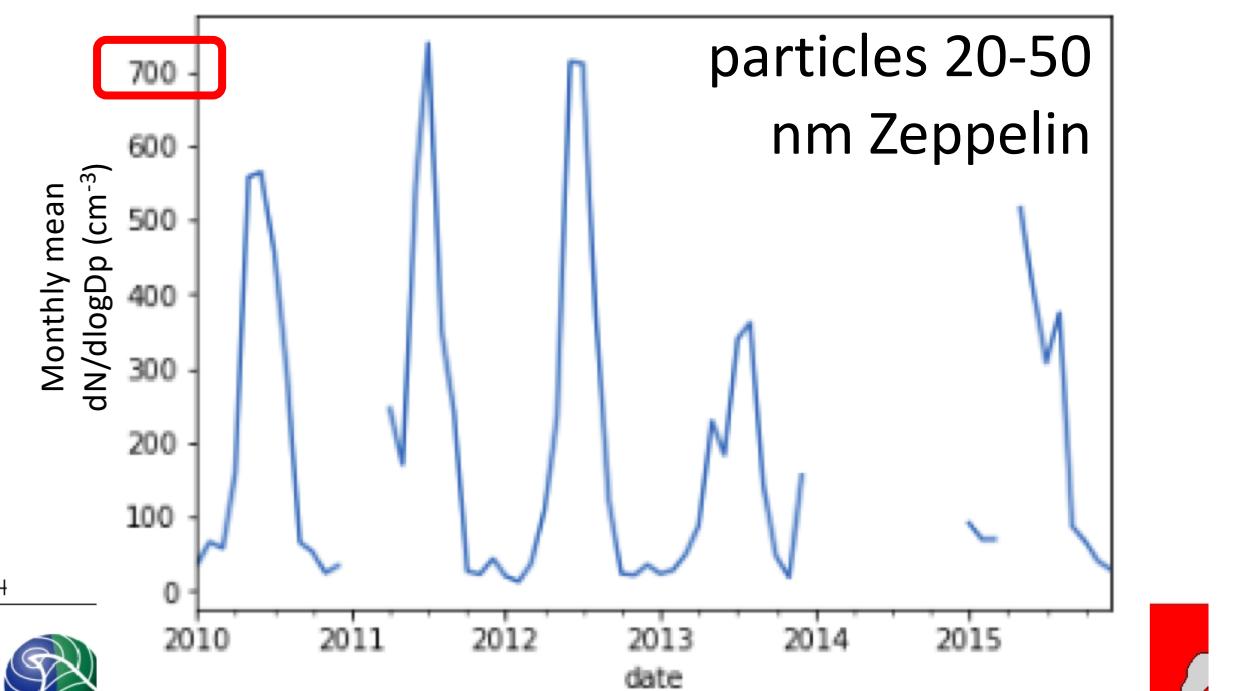
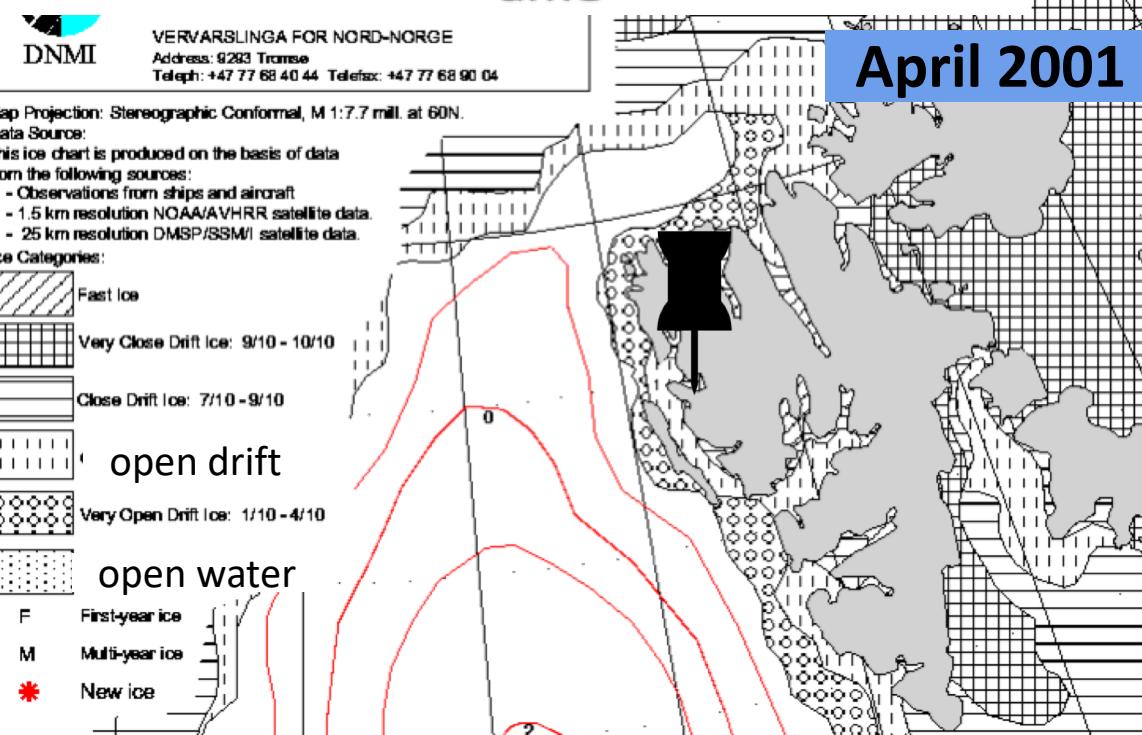
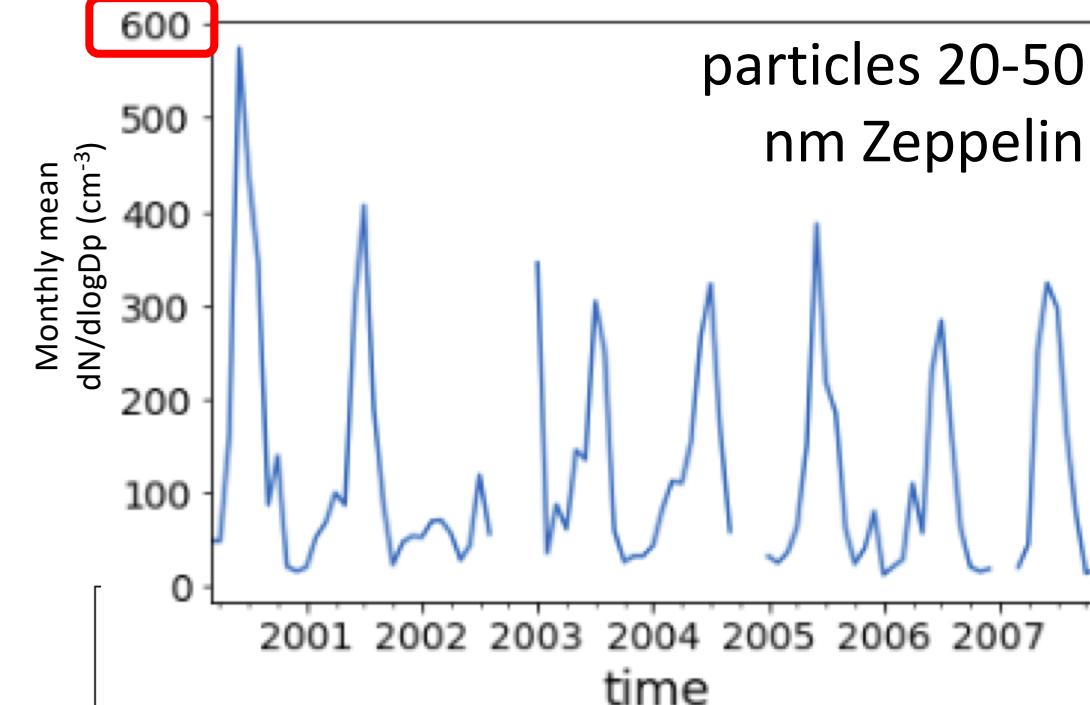
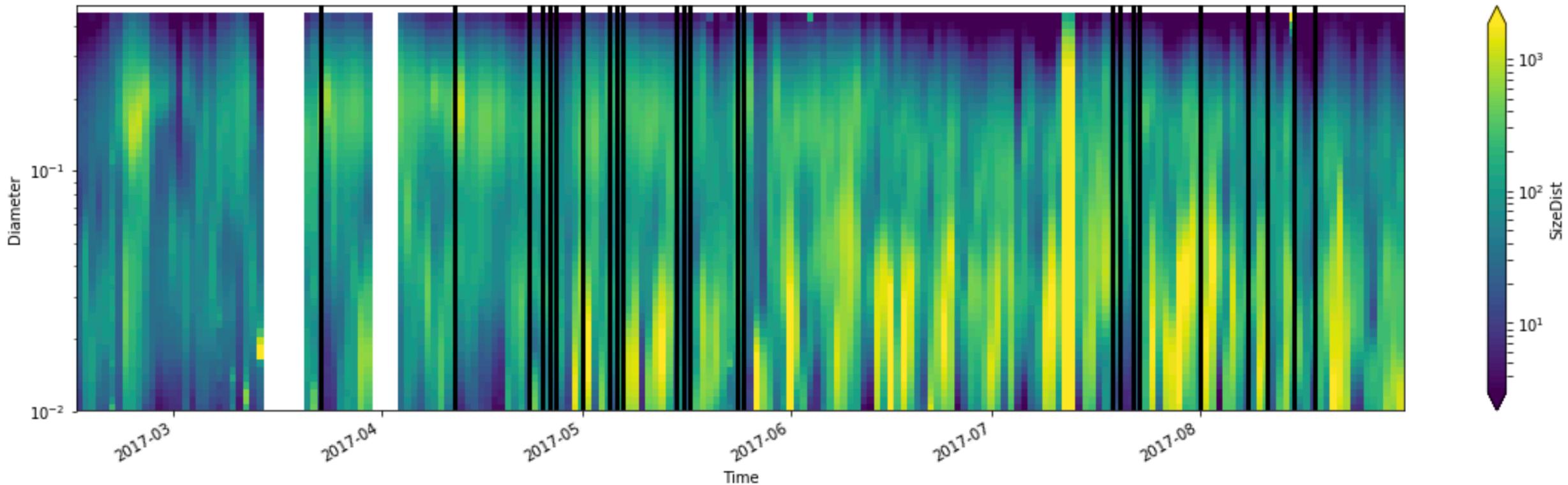


Sea ice decline and Aitkensize particle relation

Tuuli Lehmusjärvi

- Research question
 - Does declining sea ice lead to higher amount of particles in nucleation mode in Ny-Ålesund (Zeppelin)
- Data
 - Observations from Zeppelin station (particle size distribution 20 - 50 nm), 2000-2015
 - Modelled sea ice extent in the Arctic





Observational data from Gruvebadet station (Ny-Ålesund) from 2017 showing nucleation events

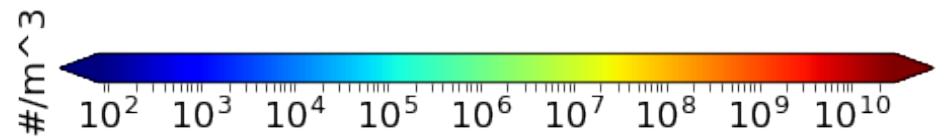
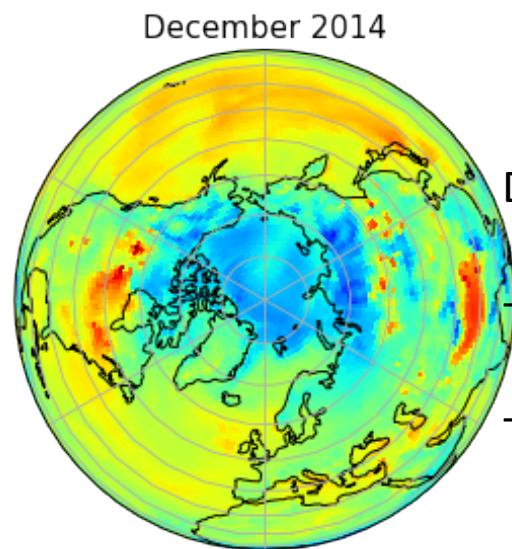
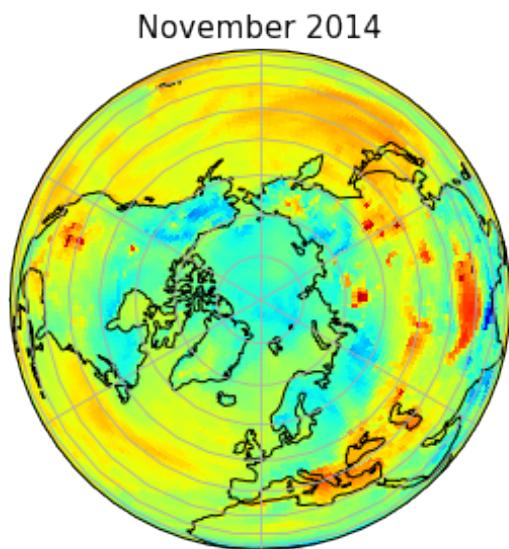
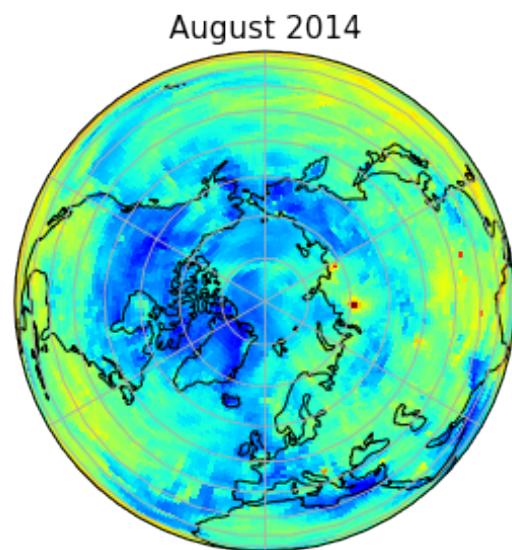
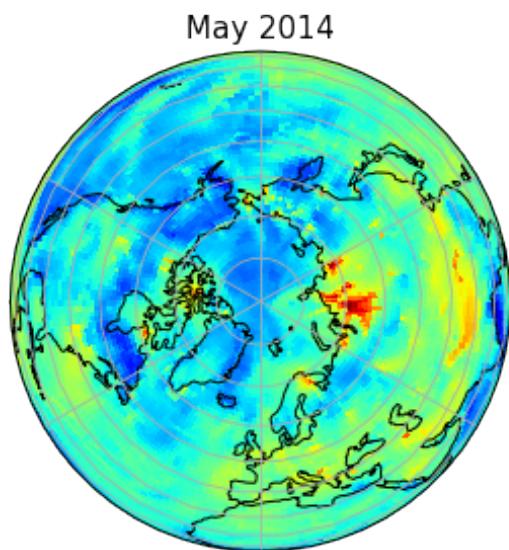
Representation of NPF events in models:

- Do models capture nucleation events?
- Do models represent the main drivers for these events?
- How does it vary with location?
 - Arctic: Continental/Maritime

Data:

- Observational aerosol data from different stations in the Arctic
- Model data:
 - 'concnmcn' = Number conc. of nuc. mode particles
 - ...

Number Concentration of Nucleation Mode Particles (<3 nm)



Model: UKESM

- Historical simulation
- Monthly averaged values
- Initial results show lower Nuc. Mode particles at ground level in Arctic during NPF events compared to winter months
- More pronounced mixing in warmer seasons → Lower concentrations
- → Look into vertical distribution

Data:

- Observational aerosol data from different stations in the Arctic
 - Further investigations needed; Boundary layer information etc.
- Model data
 - 'concnmcn' = Number conc. of nuc. mode particles
 - ...