Veðurmælingar á Drekasvæðinu 2008-2009

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Ian Renfrew
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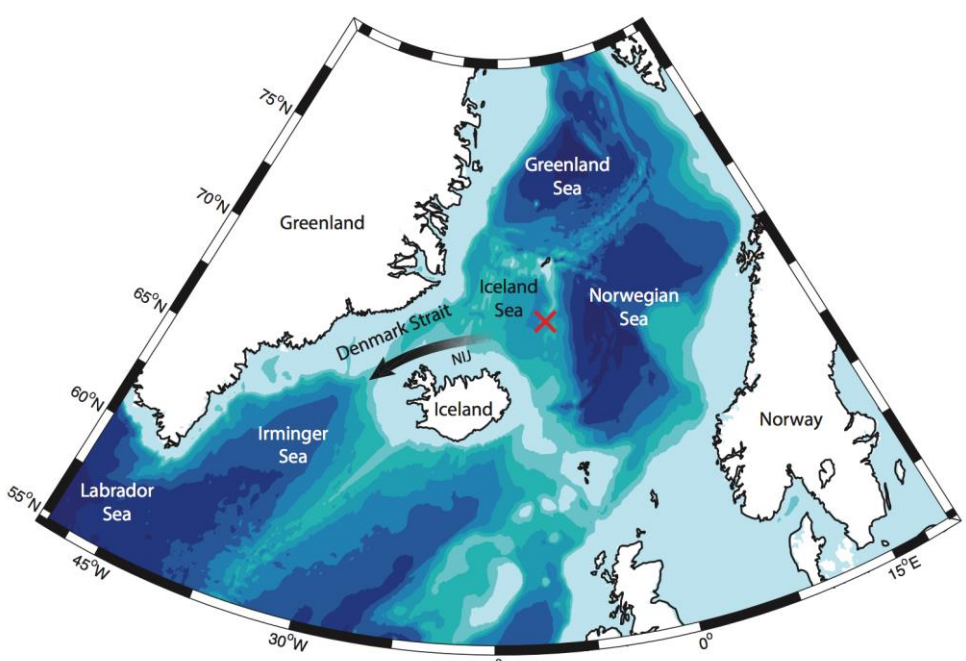
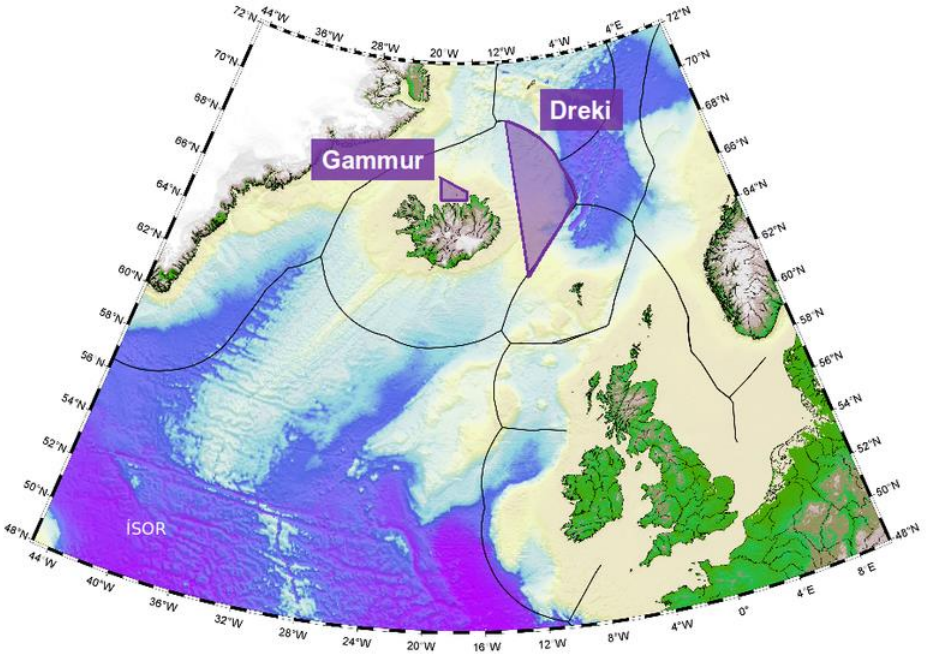
Veðurmælingar á Drekasvæðinu

- Veðurbauju var komið fyrir á Drekasvæðinu 23. nóvember 2007
- Tilgangur: að gera veður- og hafmælingar í tenglsum við hugsanlega nýtingu hugsanlegrar jarðolíu eða jarðgass á svæðinu
- Veðurmælingar stóðu yfir í tæp tvö ár





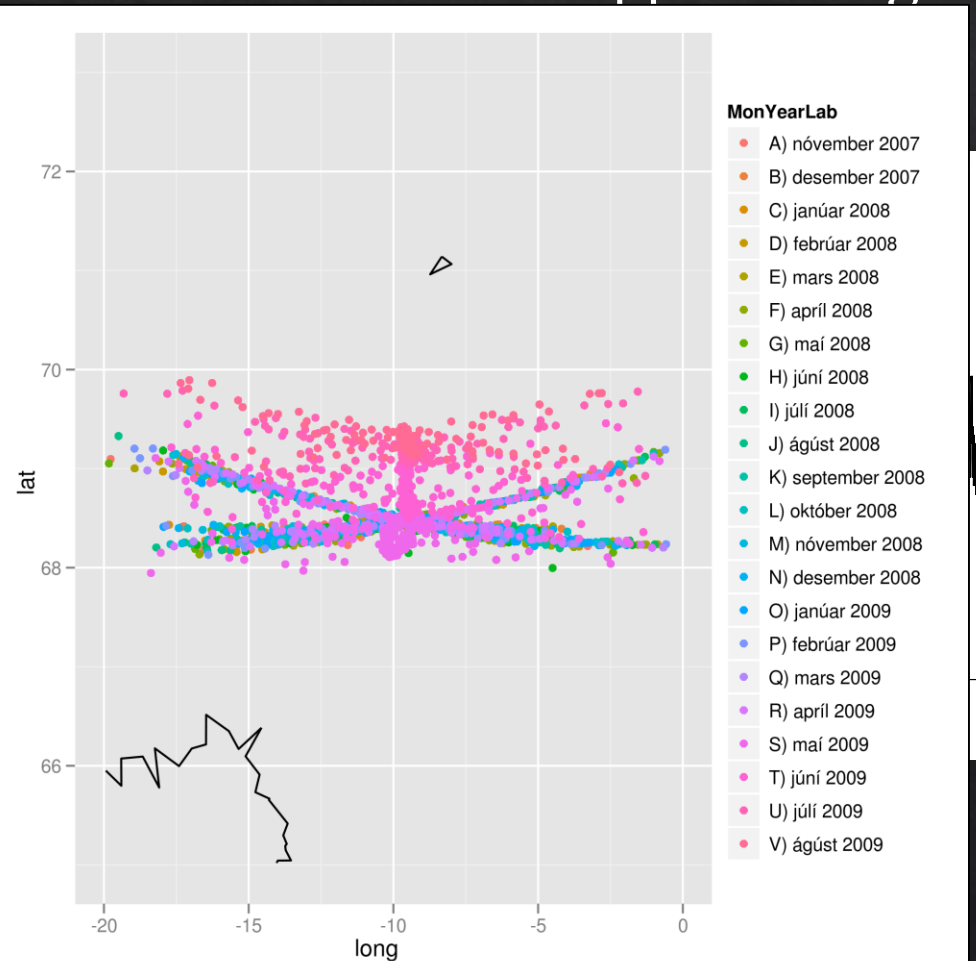
Baujumælingar

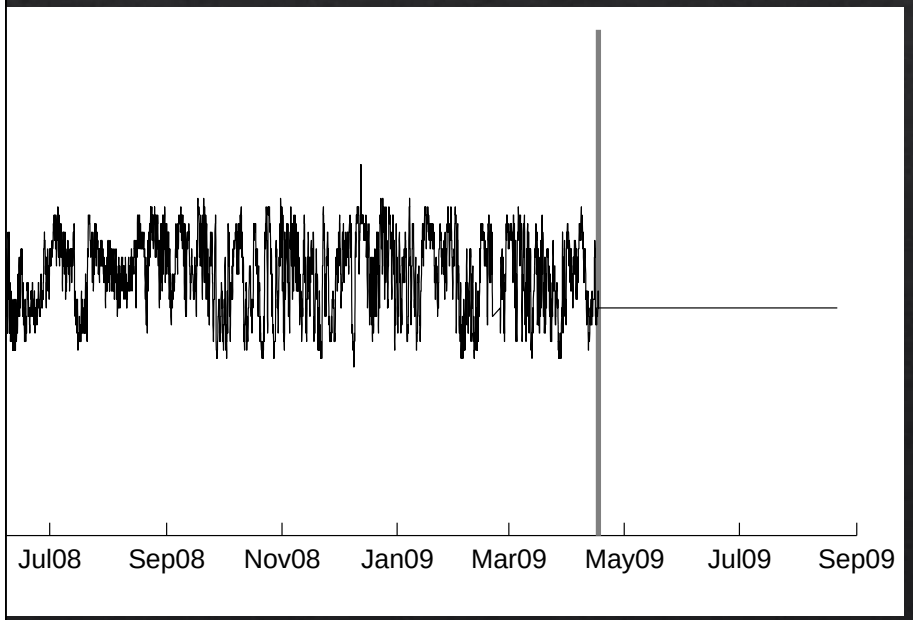
Table 1: List of variables in the .mat file and their descriptions.

prs	Sea-level pressure, 1 min average (hPa)
AirTemp	Air temperature, 3.5 m height, 1 min average (deg C)
CurrDir	Current direction, 1.5 m depth (deg)
CurrSpeed	Current speed, 1.5 m depth (cm/s)
hm0	Estimate of significant wave height, Hs (m?)
hm0a	Estimate of significant wave height, Hs, lower frequency band
hm0b	Estimate of significant wave height, Hs, mid frequency band
hmax	Height of highest wave (m?)
Humidity	Relative humidity, 3.5 m height, 1 min average (%)
latitude	Deg. North
longitude	Deg. East
mdir	Mean spectra wave direction
mdira	Mean spectra wave direction, lower frequency band
mdirb	Mean spectra wave direction, mid frequency band
sprtp	Wave spreading at spectral peak period (s^{-1}?)
thhf	High frequency mean wave period (s^{-1}?)
thmax	Period of the highest wave (s?)
tm01	Estimate 1 of Tz, mean wave period (s)
tm02	Estimate 2 of Tz
tm02a	Estimate 2 of Tz, lower frequency band
tm02b	Estimate 2 of Tz, mid frequency band
tp	Period of spectral peak
tw	Sea surface temperature from current meter, 1.5 m depth (deg C)
wdir	Wind direction, 4 m height, 10 min average (deg)
wgs	Wind gust, 4 m height, highest 3 sec wind measurements (m/s)
wnd	Wind speed, 4 m height, 10 min average (m/s)

Sigvaldi Árnason

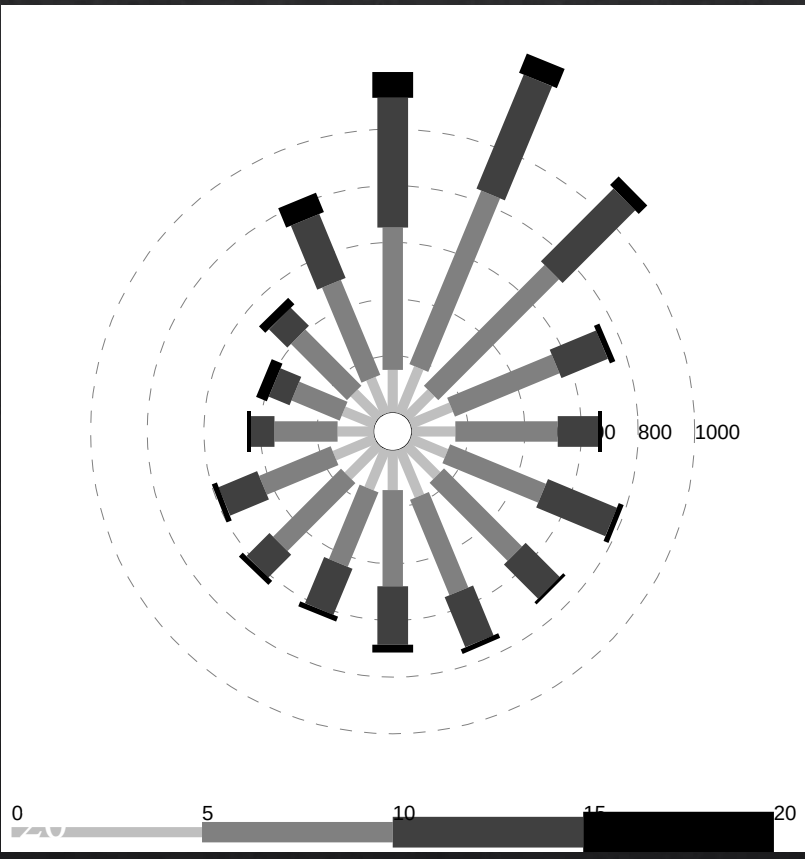
- GPS tæki óvirkt um tíma - þá sendi duflið frá sér veðurfræðilegar mælingar og sjávarhita en engin gögn um straumhraða og straumstefnu.
- Eftir 17. apríl slitnaði akkerið og baujan fór í ferðalag. Hafró sótti duflið 21. ágúst 2009, 104 km frá upprunanlegri staðsetningu (69.40N, 9.62W)



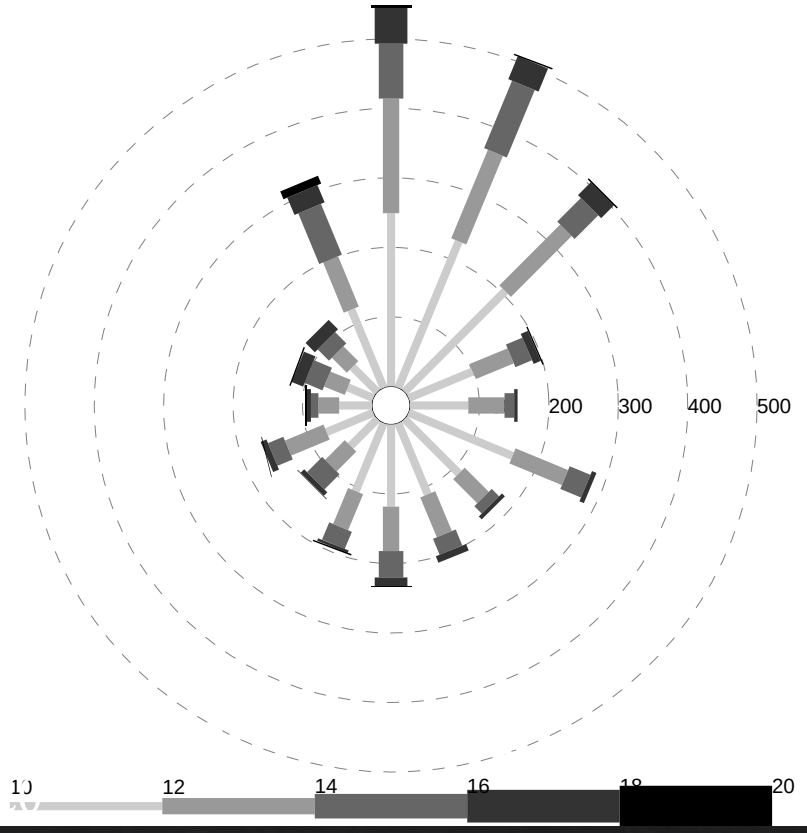


Vindrósir

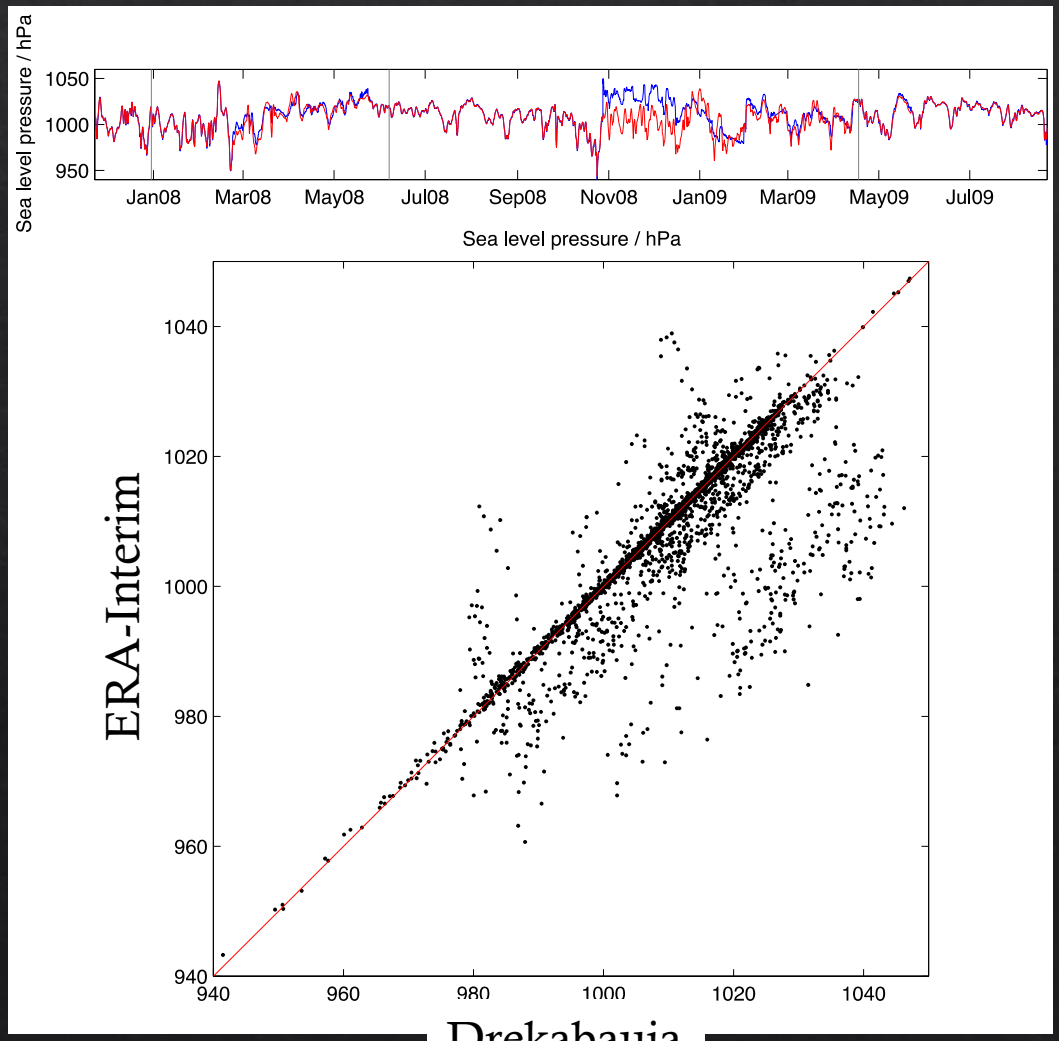
Allar athuganir



Vindhraði>10 m/s

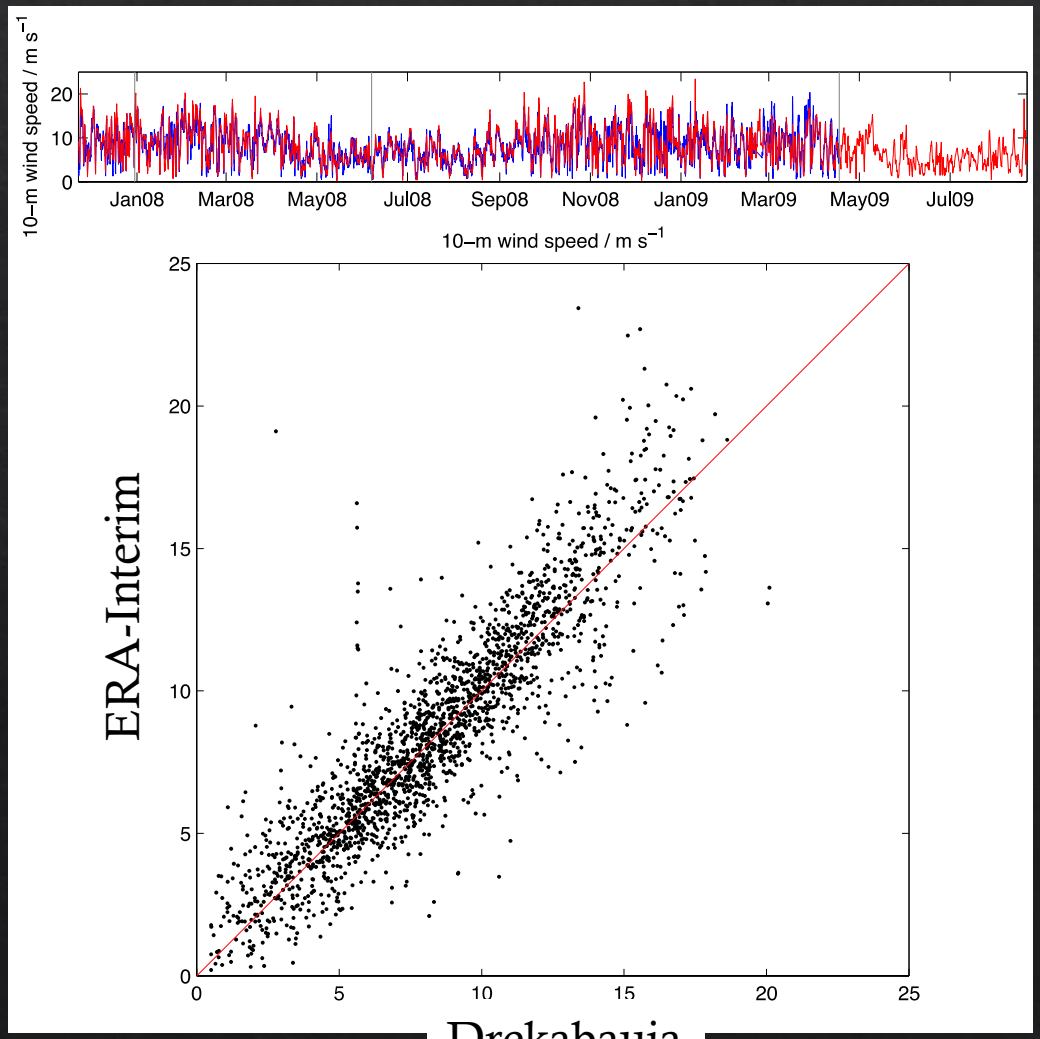


Loftþrýstingur: Drekabauja – ERA-Interim



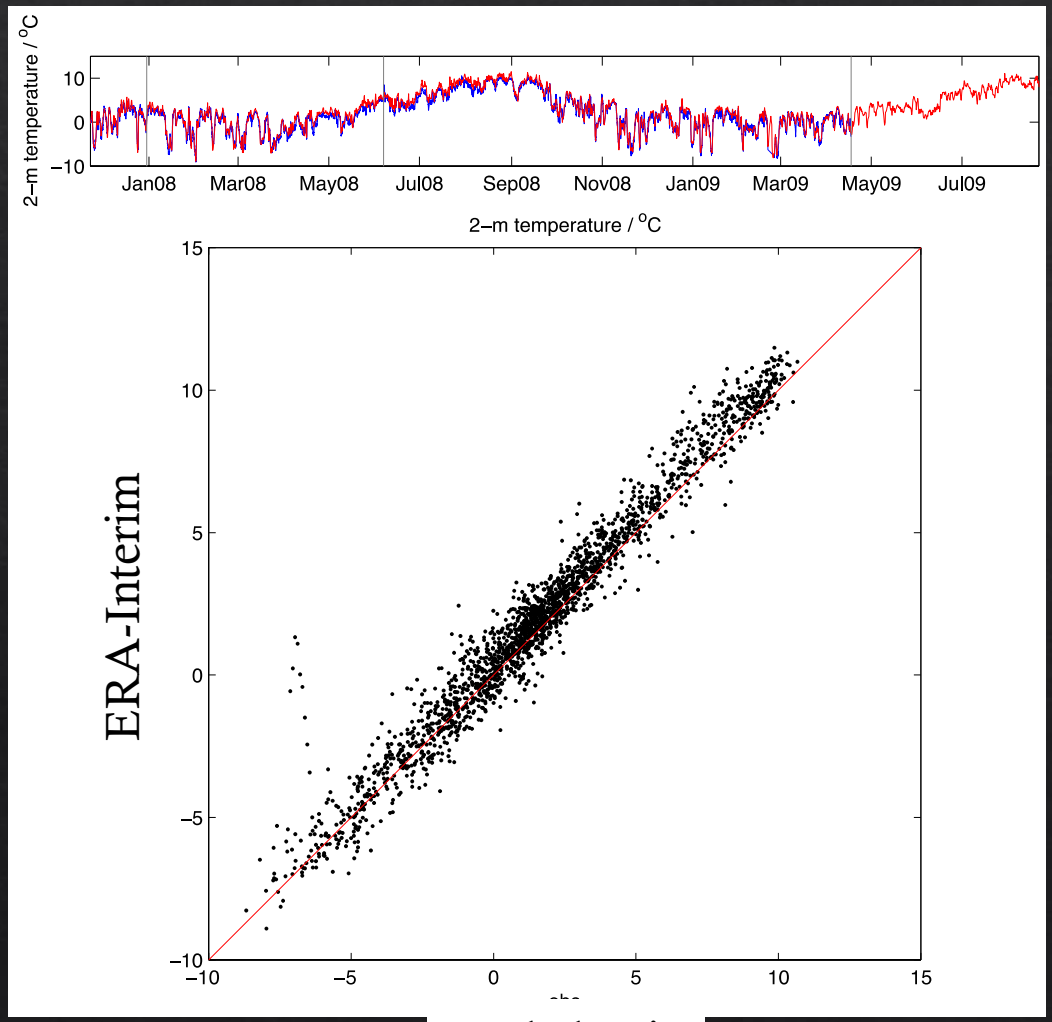
- Gott samræmi
- Villur í mælingum (blá lína) á eftir djúpum lægðum

Vindhraði : Drekabauja – ERA-Interim



- Uppreiknaður í 10 m y.s.m.
- Baujumælingar lægri í stormi

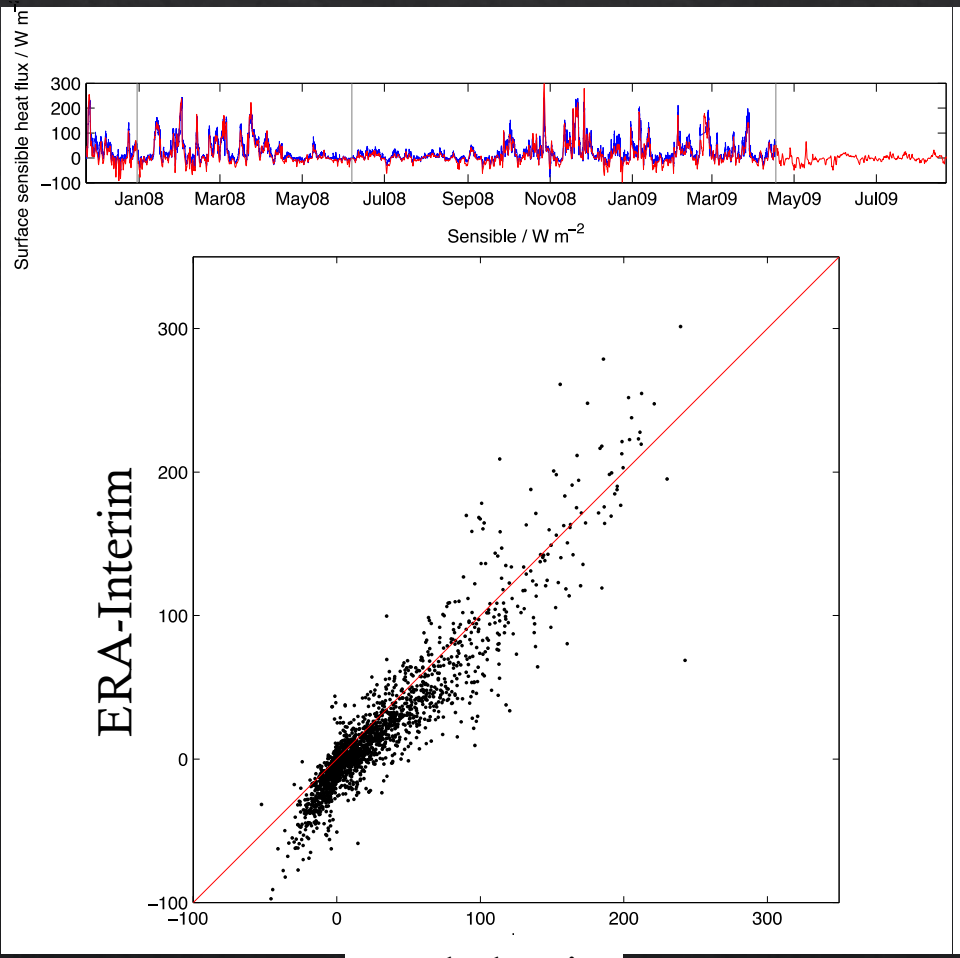
Lofthiti : Drekabauja – ERA-Interim



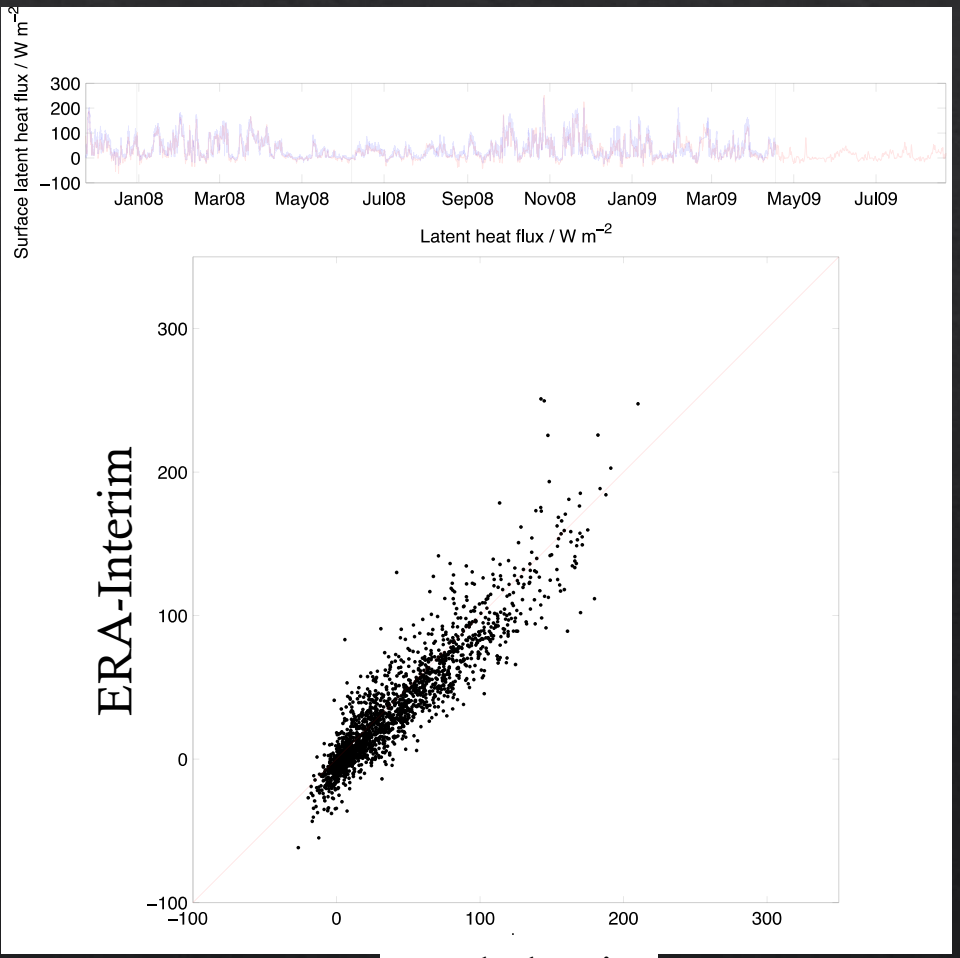
Drekabauja

- Reiknaður niður í 2 m hæð y.s.m.

Skin- og dulvarmaflæði: Drekabauja – ERA-Interim

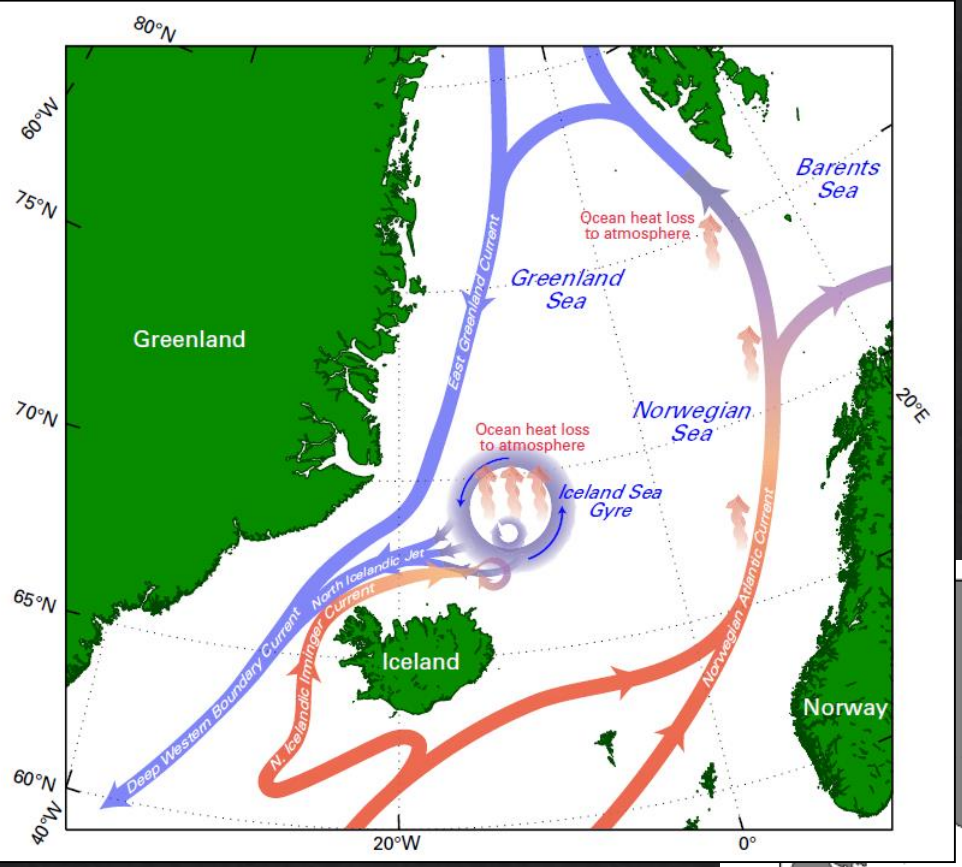


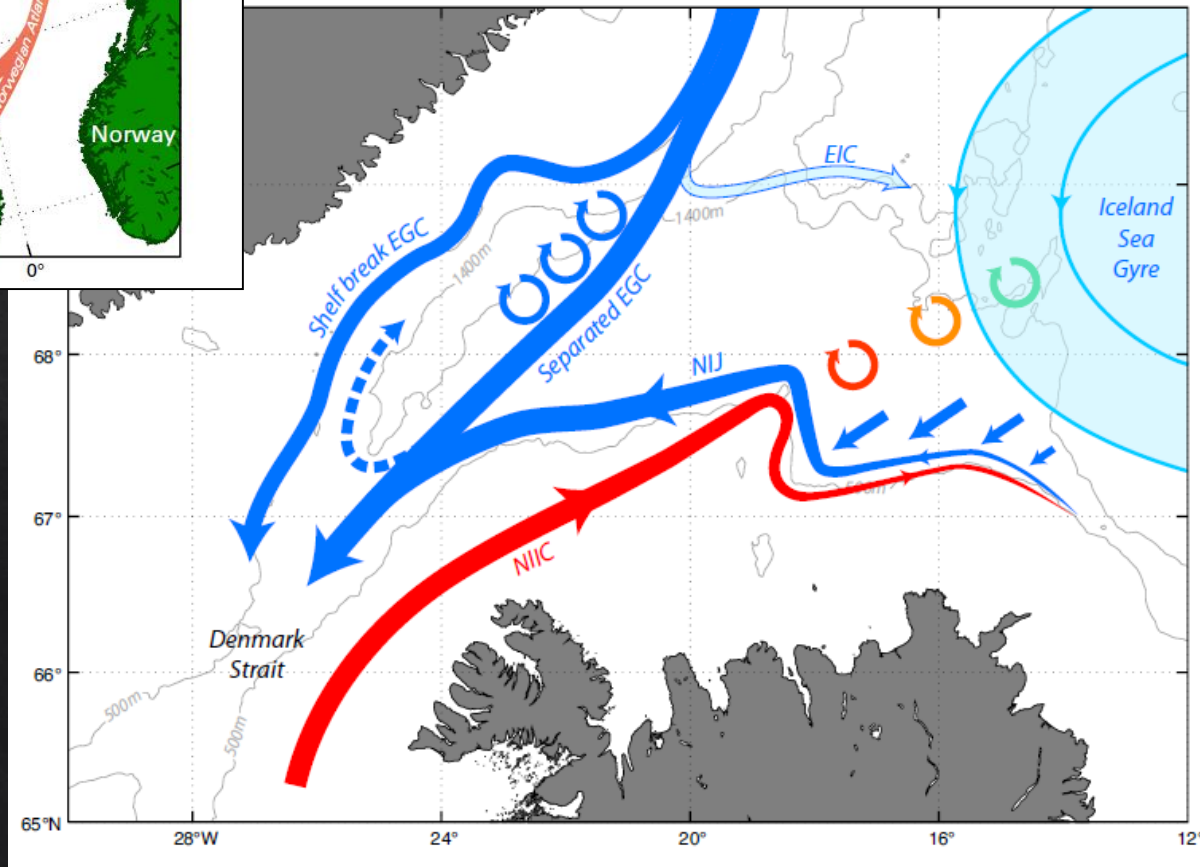
Drekabauja



Drekabauja

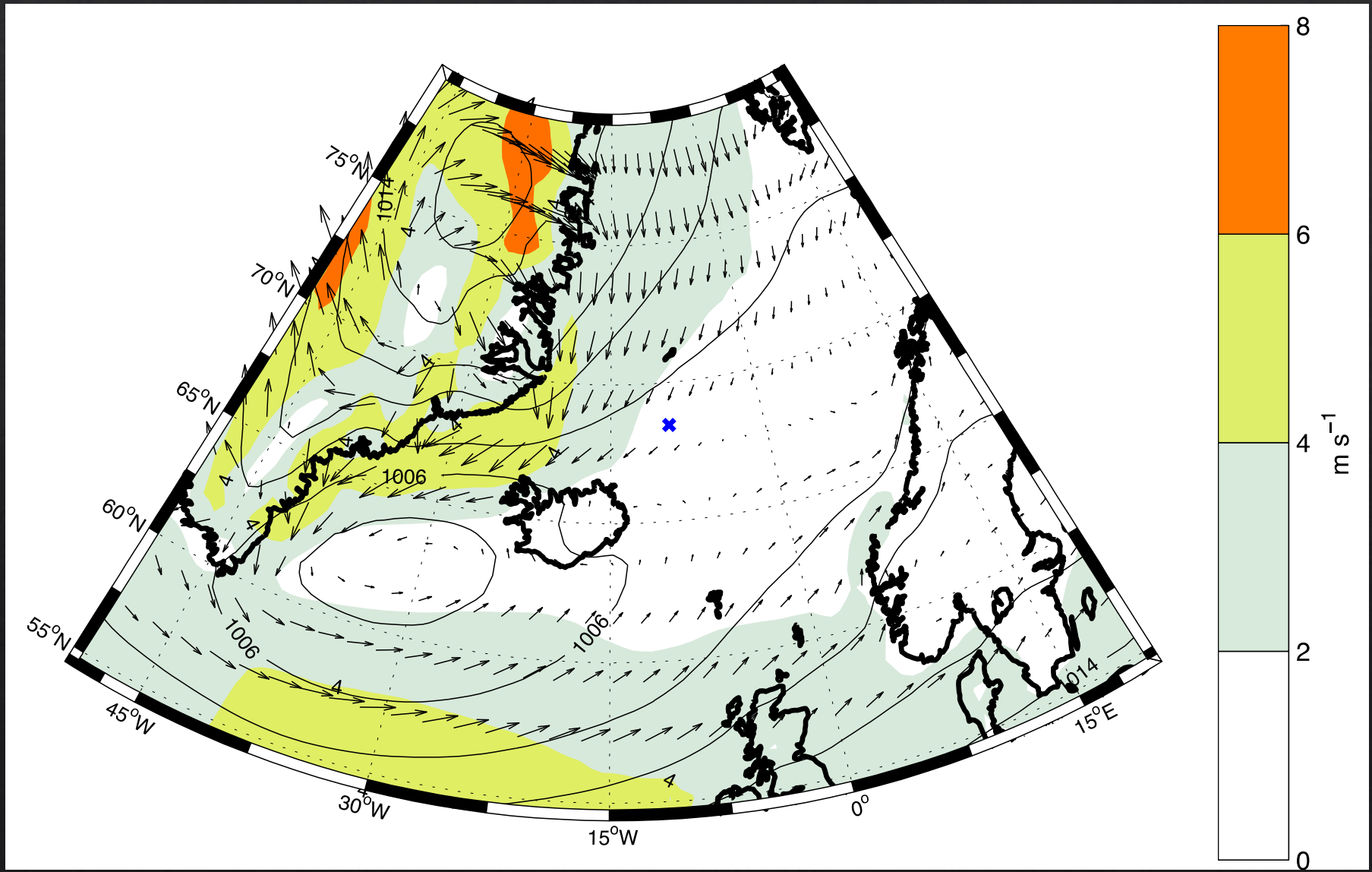
- Djúpsjávarstraumurinn á Grænlandssundi er samsettur
- Bendir til djúpsjávarmyndunar á Íslandshafi
- Djúpsjór myndast þar sem mikið hitatap er úr sjó, sjórinn verður kaldur (og saltur) => þungur => sekkur



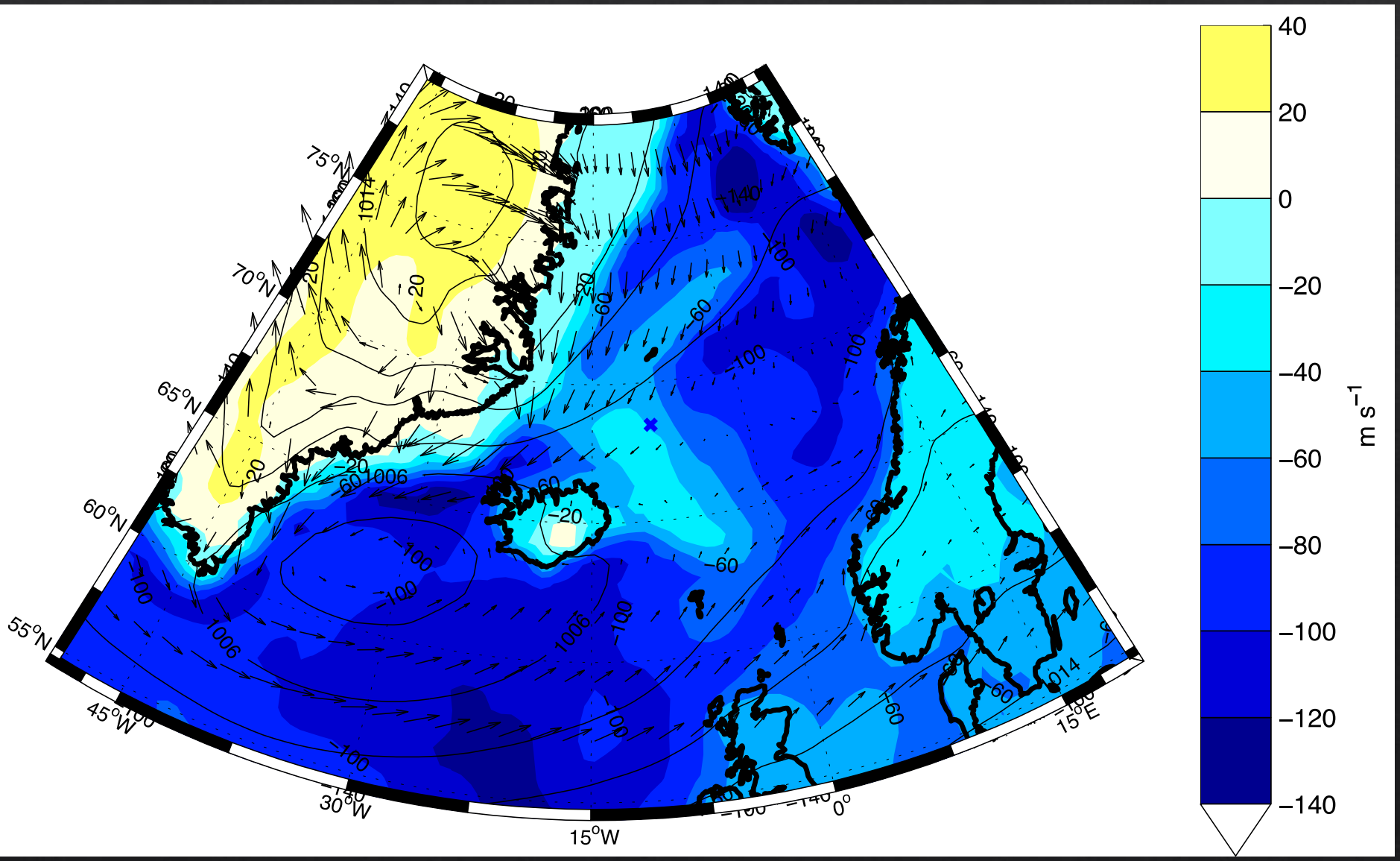


Våge et al. (2013)

Meðalvindhraði

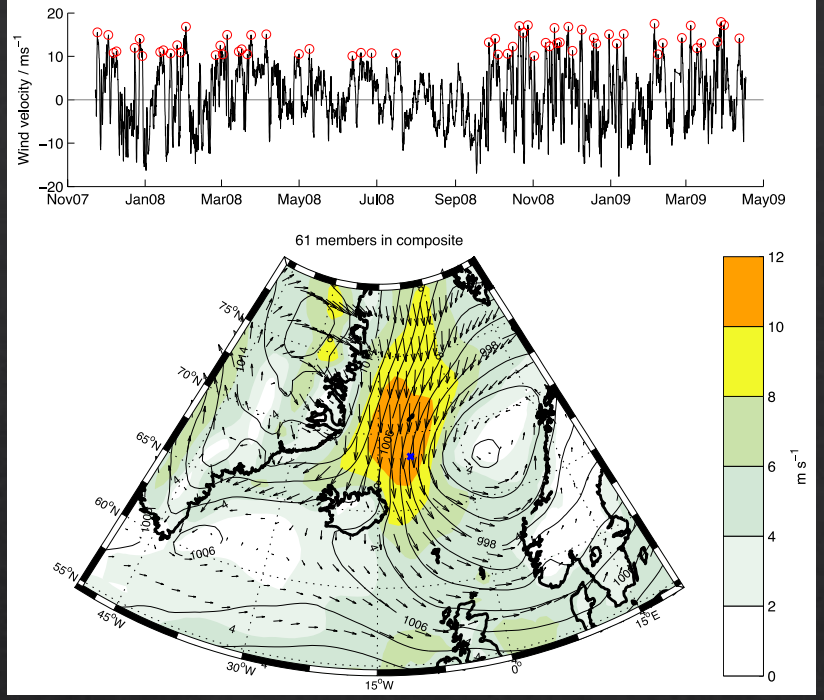


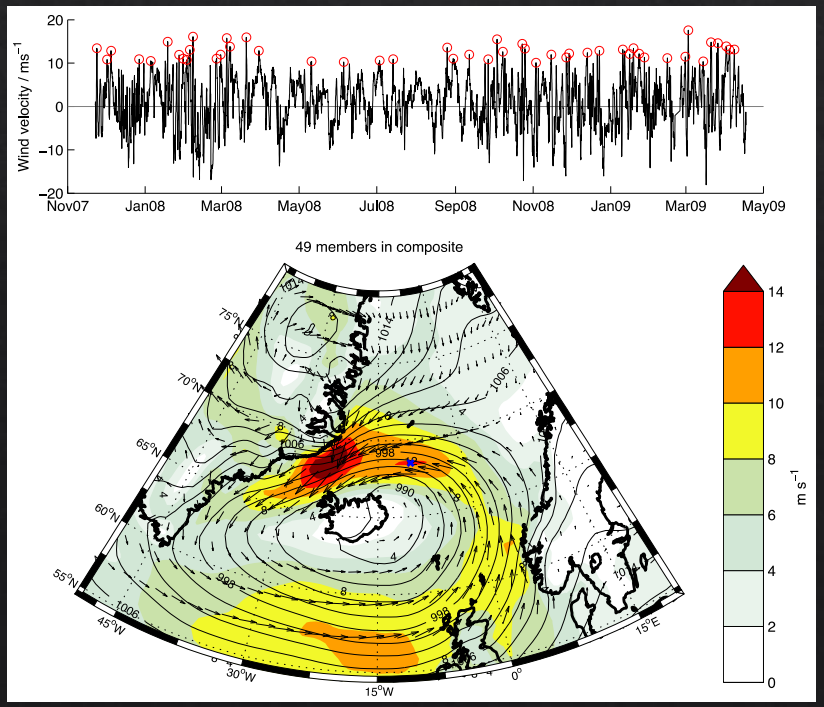
Meðalhitaflæði (úr sjó í lofthjúp)

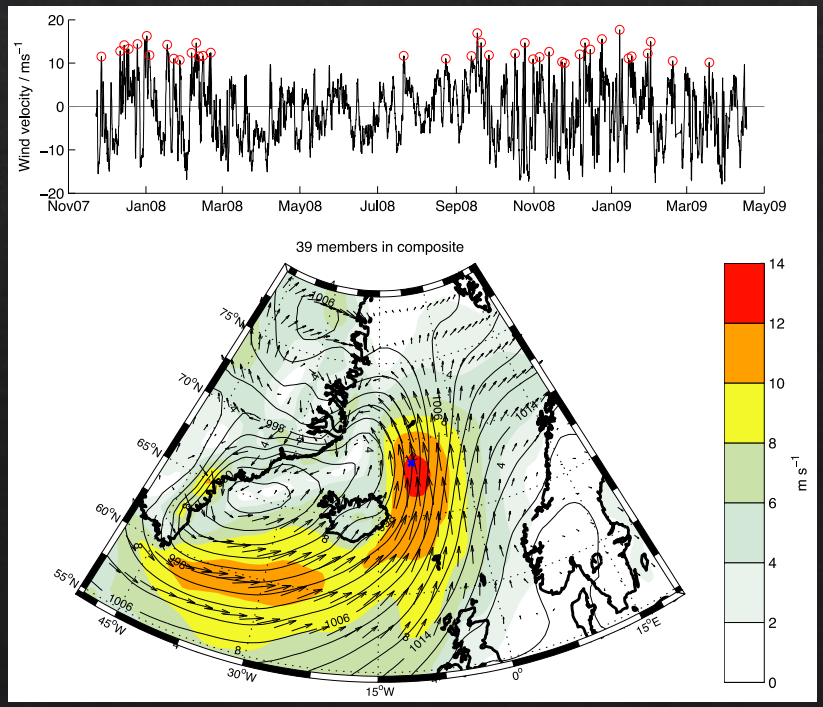


Meðalvindhraði

- Fyrir N, A og S átt

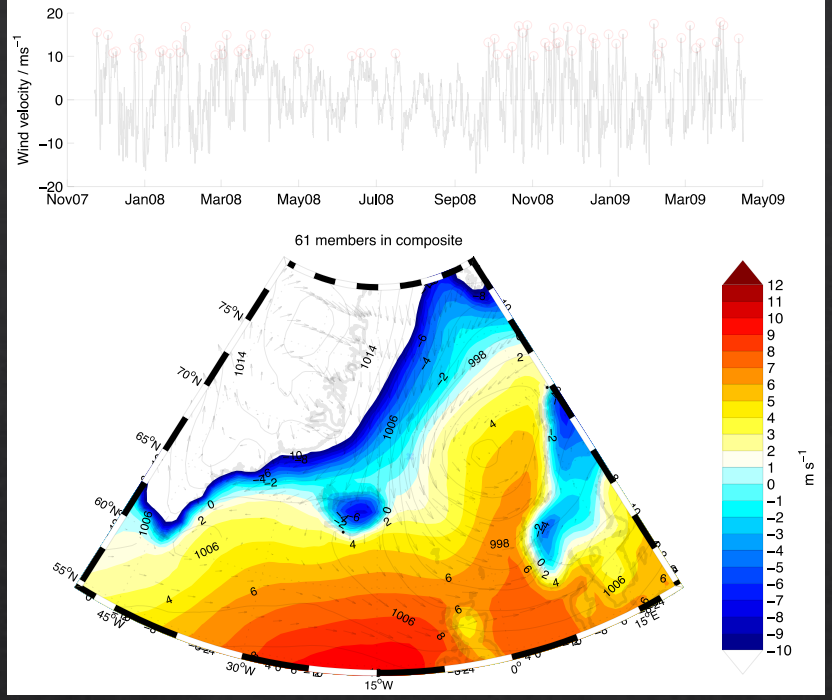


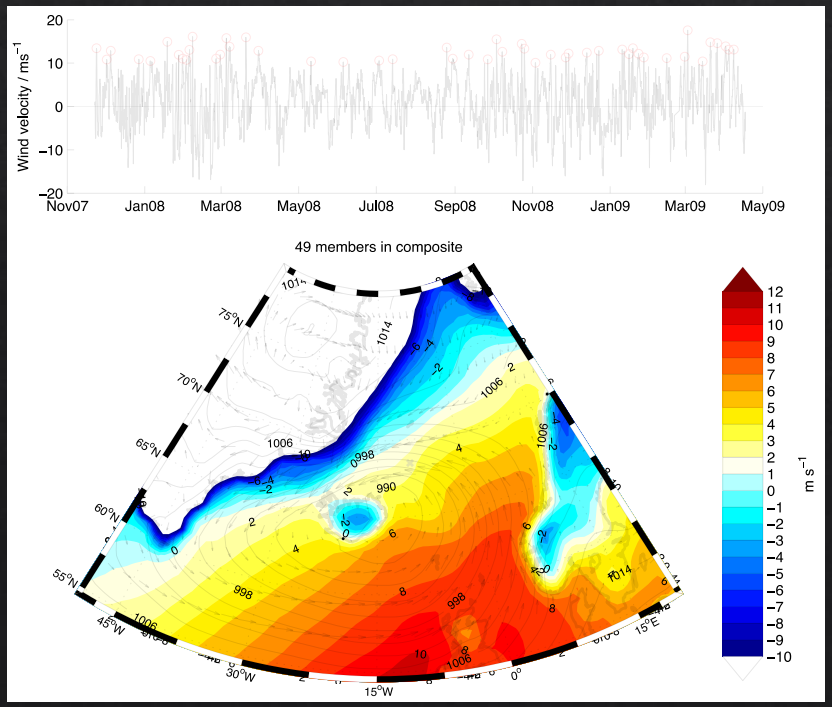


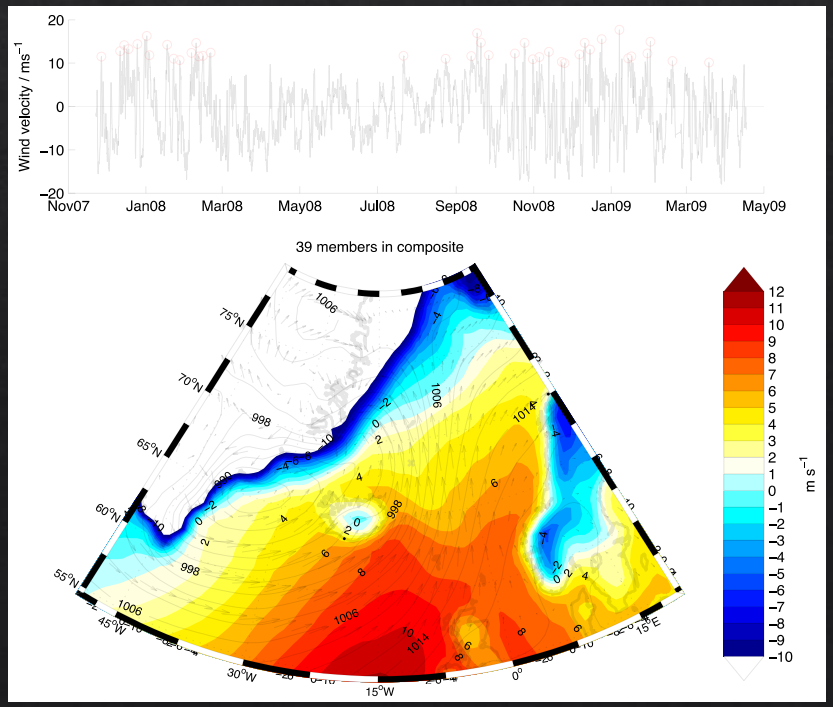


Meðallofthiti

Fyrir N, A og S átt

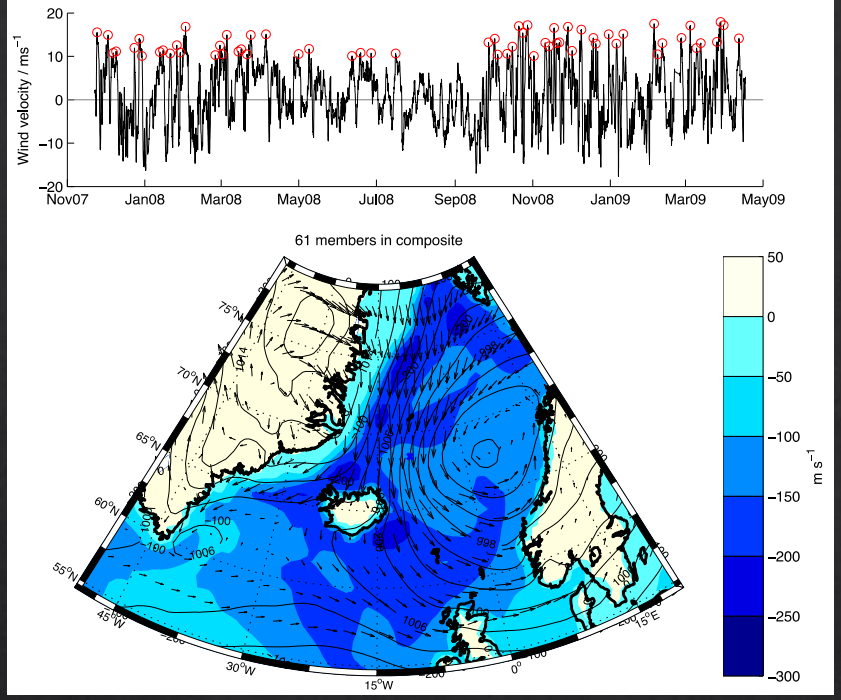


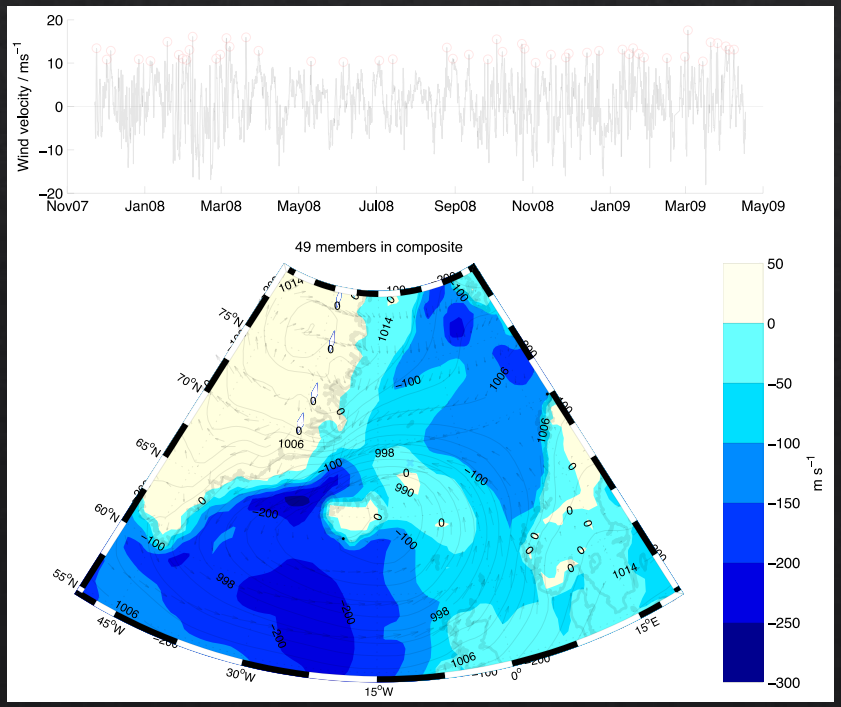


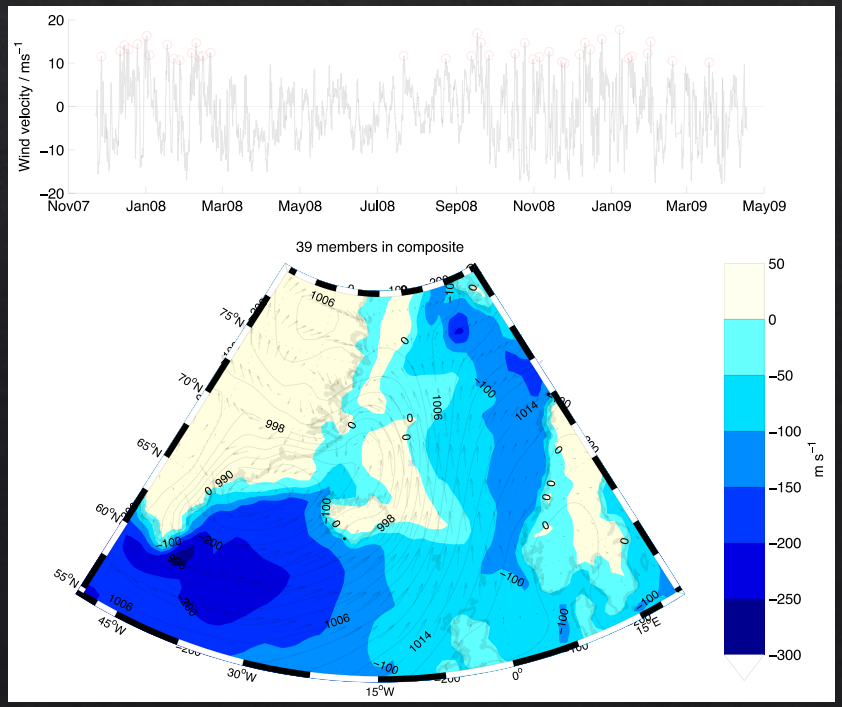


Meðalhitaflæði

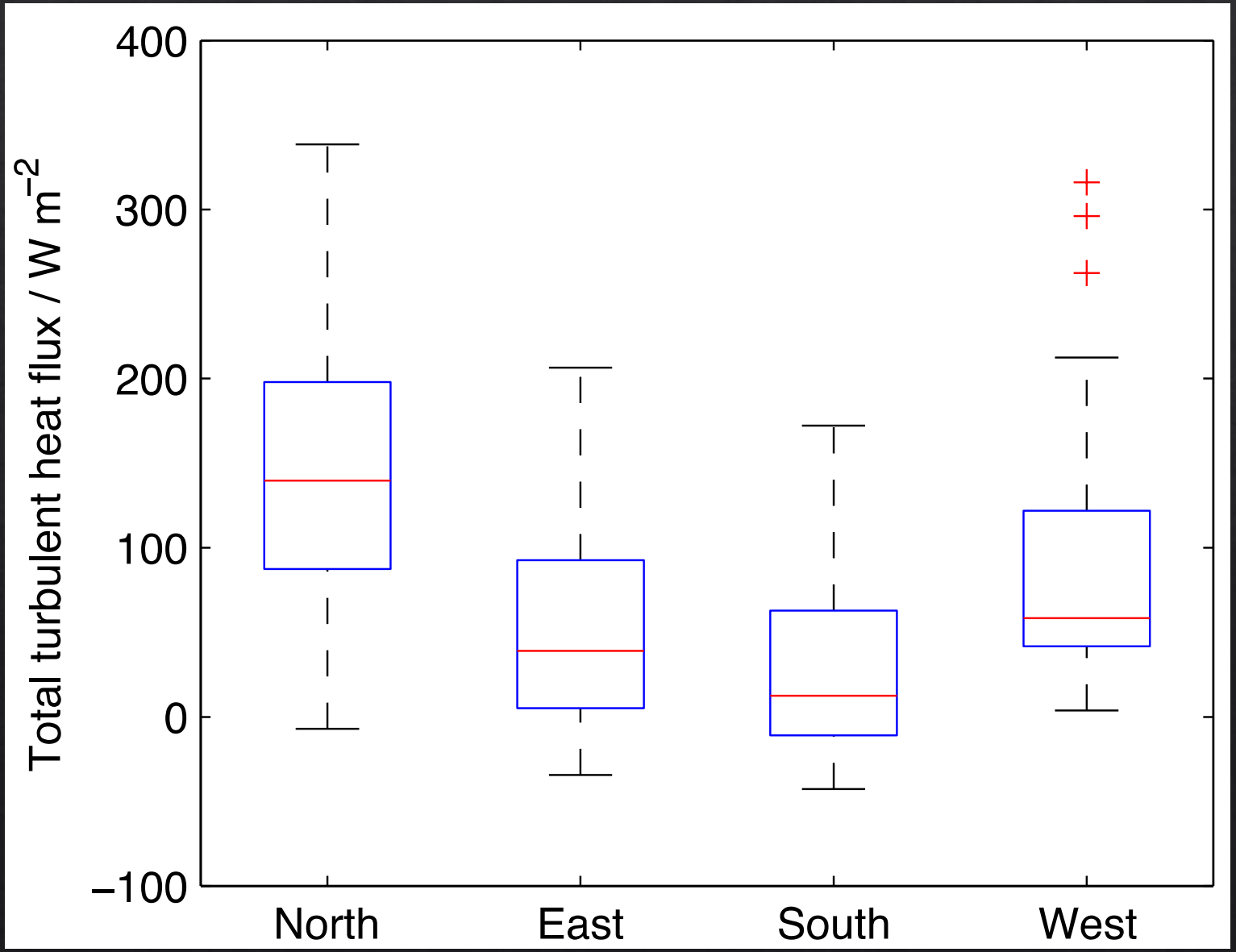
Fyrir N, A og S átt



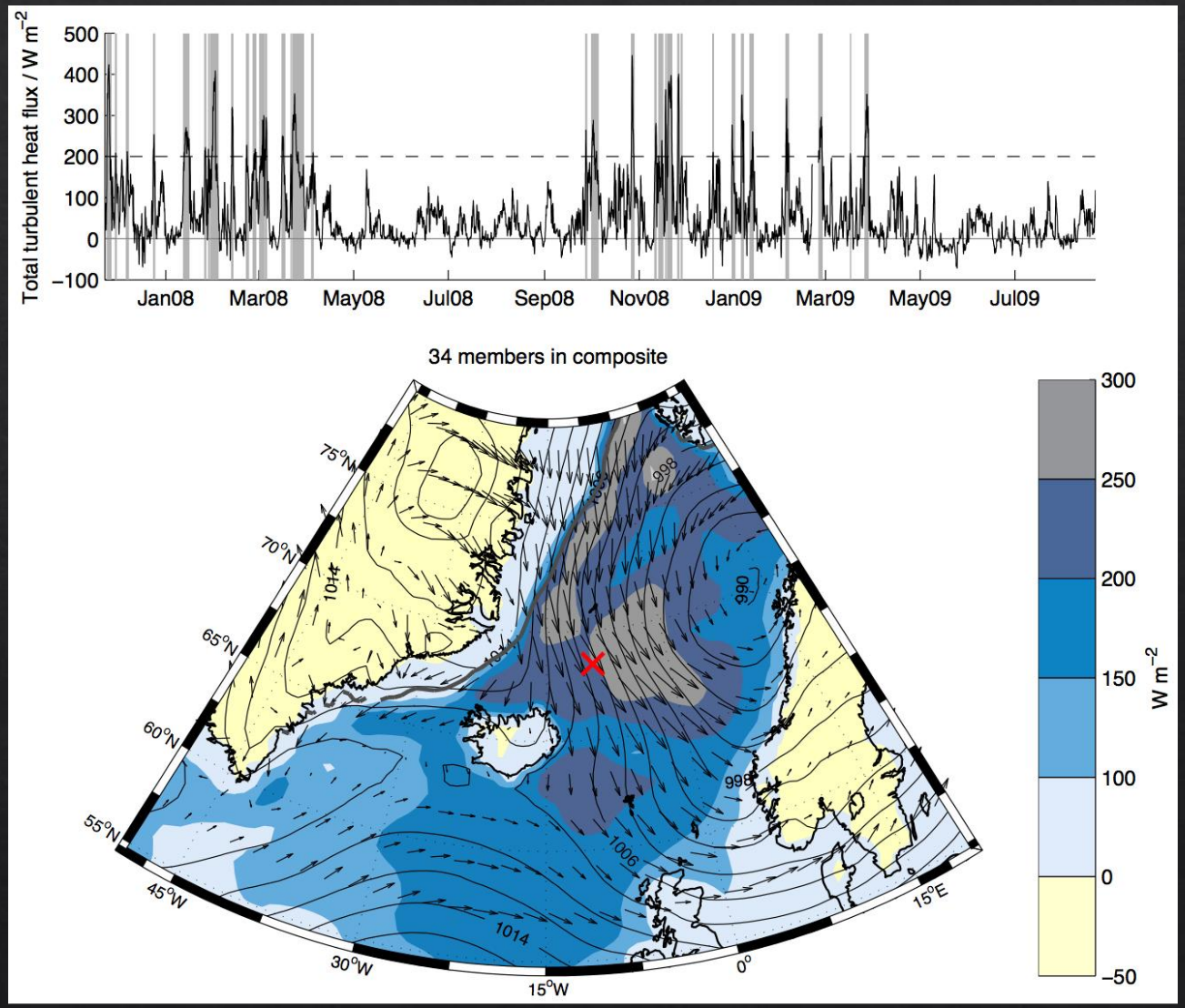




Total turbulent heat fluxes

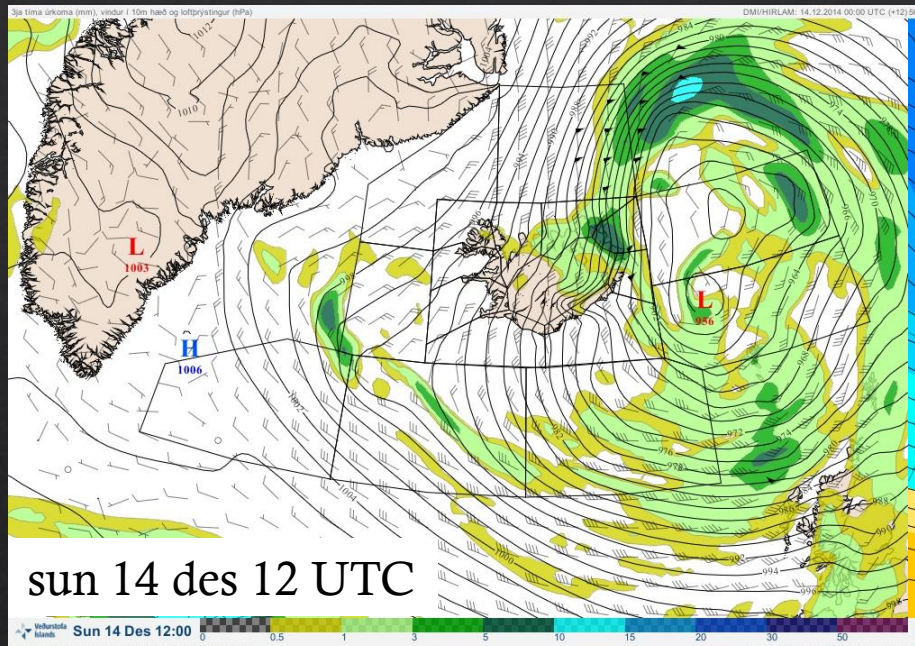


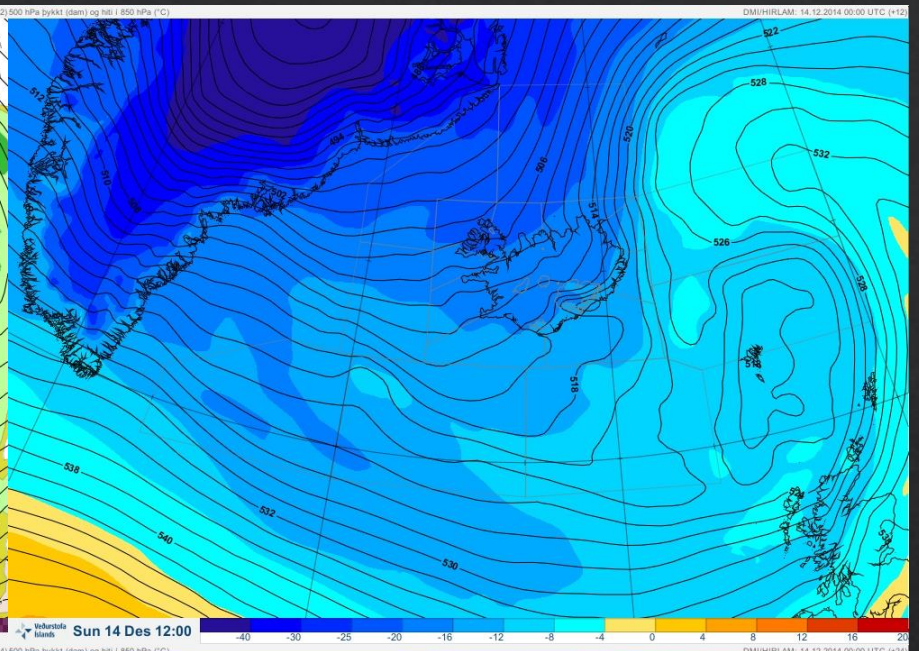
Nokkuð hitaflæði við bauju

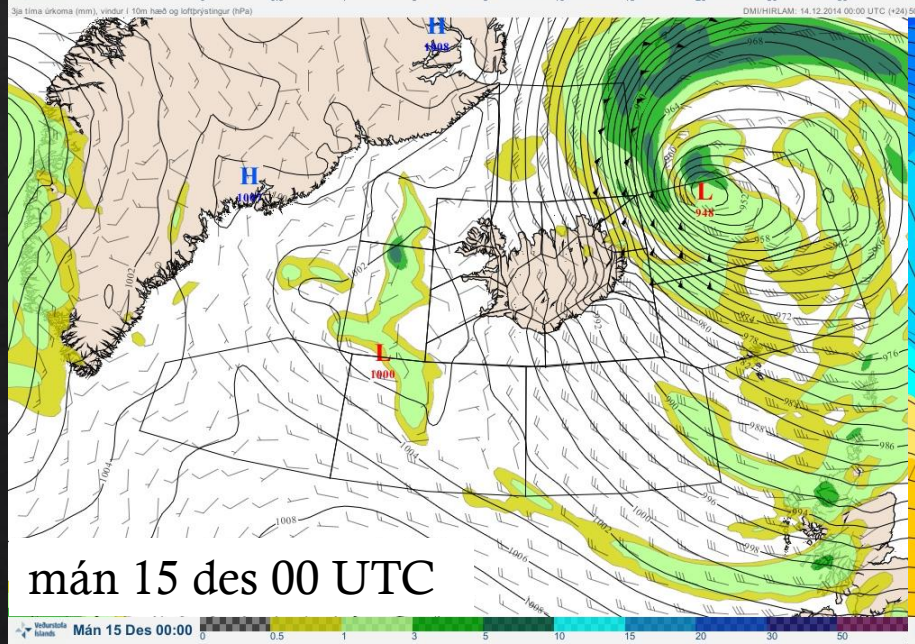


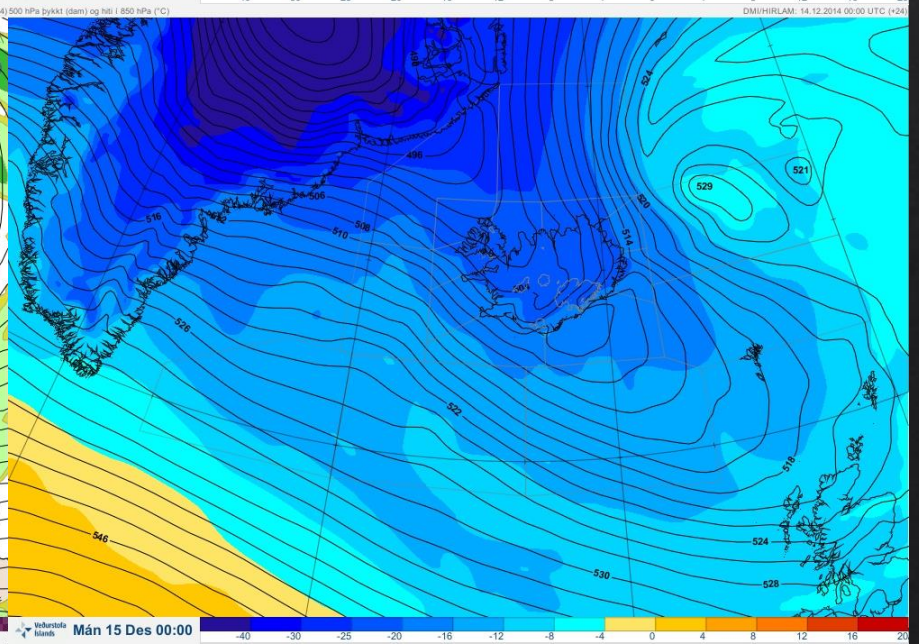
Loftþrýstingur, vindhraði og úrkoma

850 hPa hiti og 1000-500 hPa þykkt

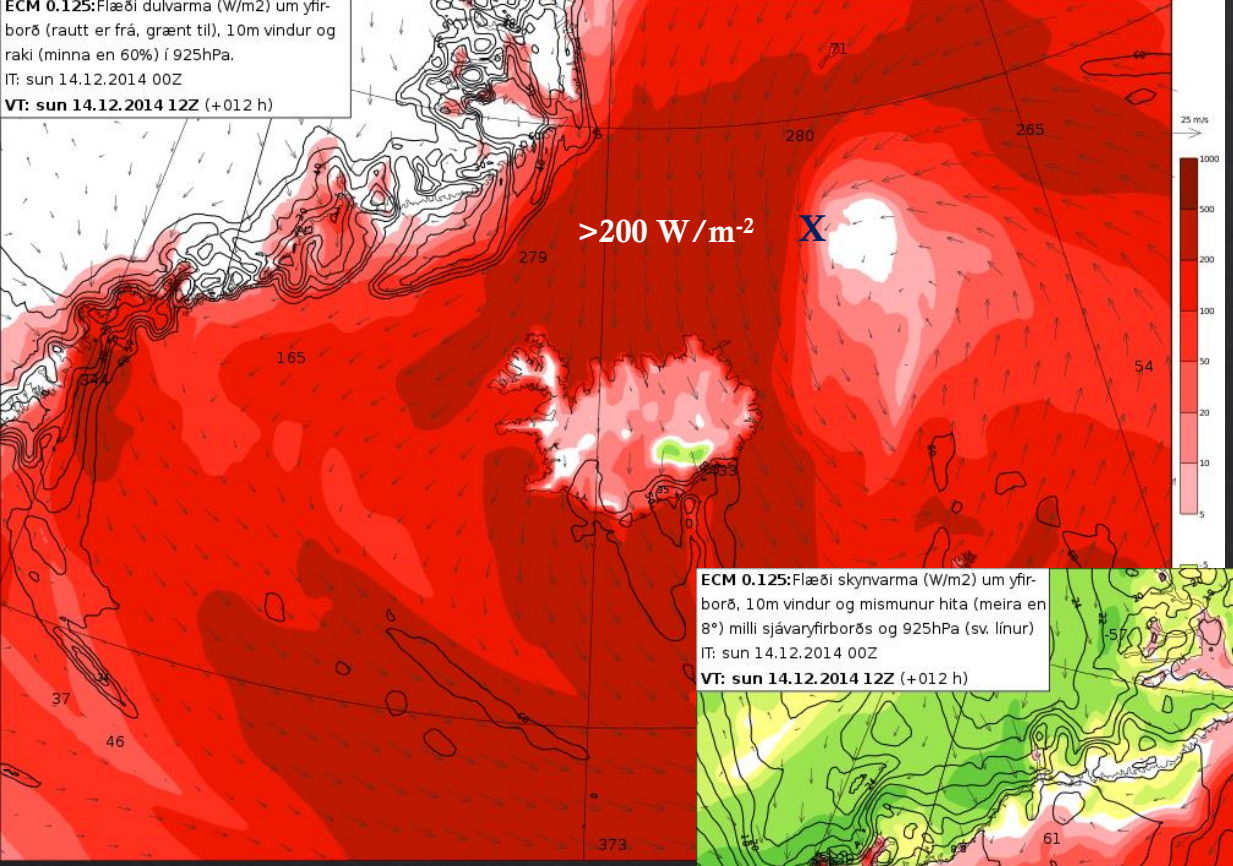




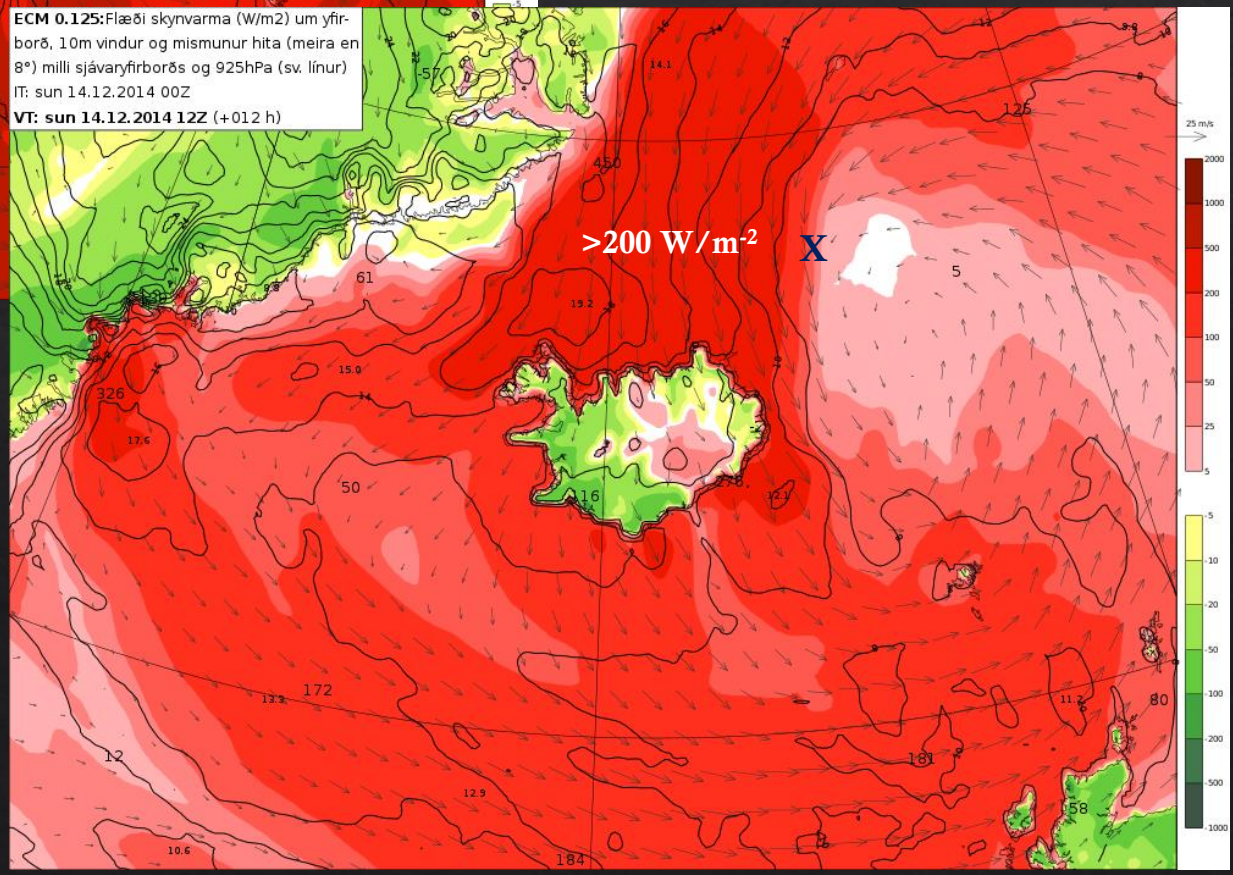




14 desember 2014 12 UTC



Dulvarmaflæði

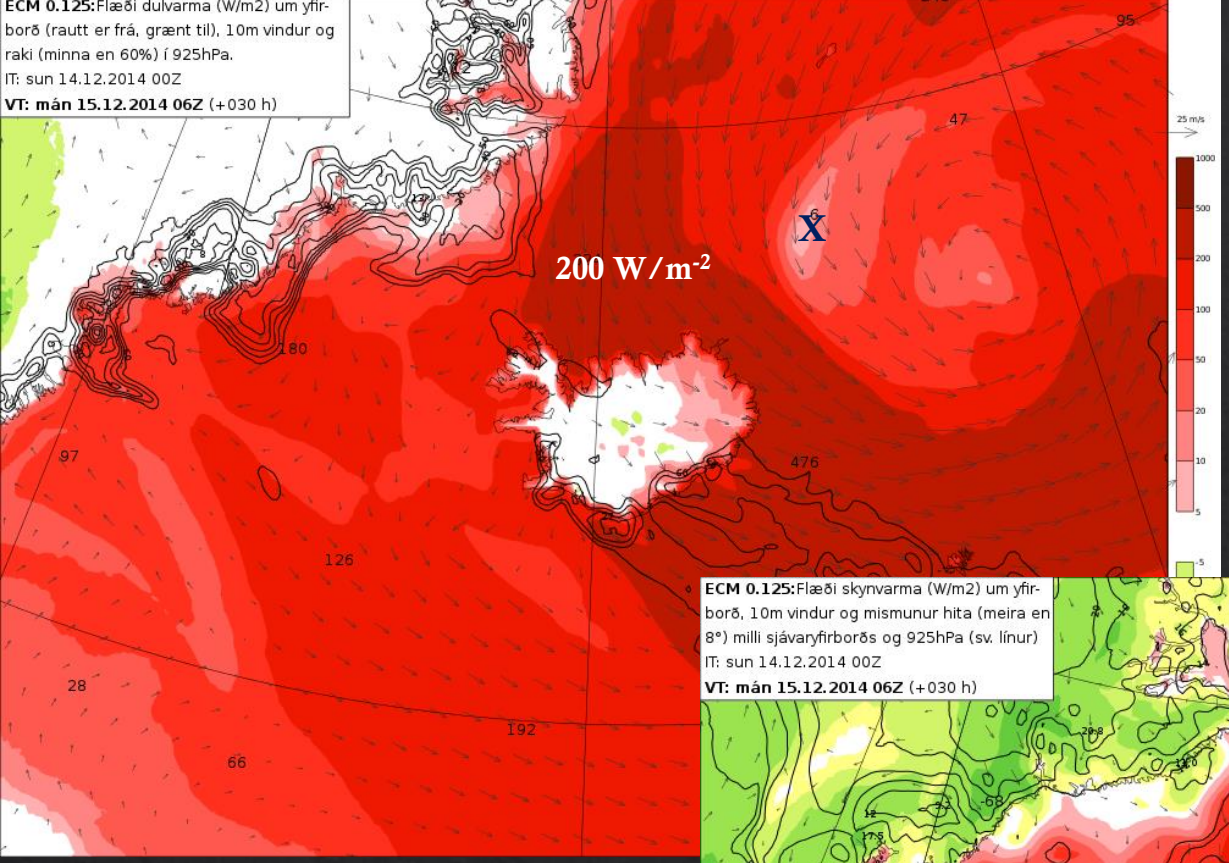


Skinvarmaflæði

Hitaflæði norður af Íslandi
200 W/m^{-2} + 200 W/m^{-2}

Baujustaðsetning:
100 W/m^{-2} + 100 W/m^{-2}

15 desember 2014 06 UTC



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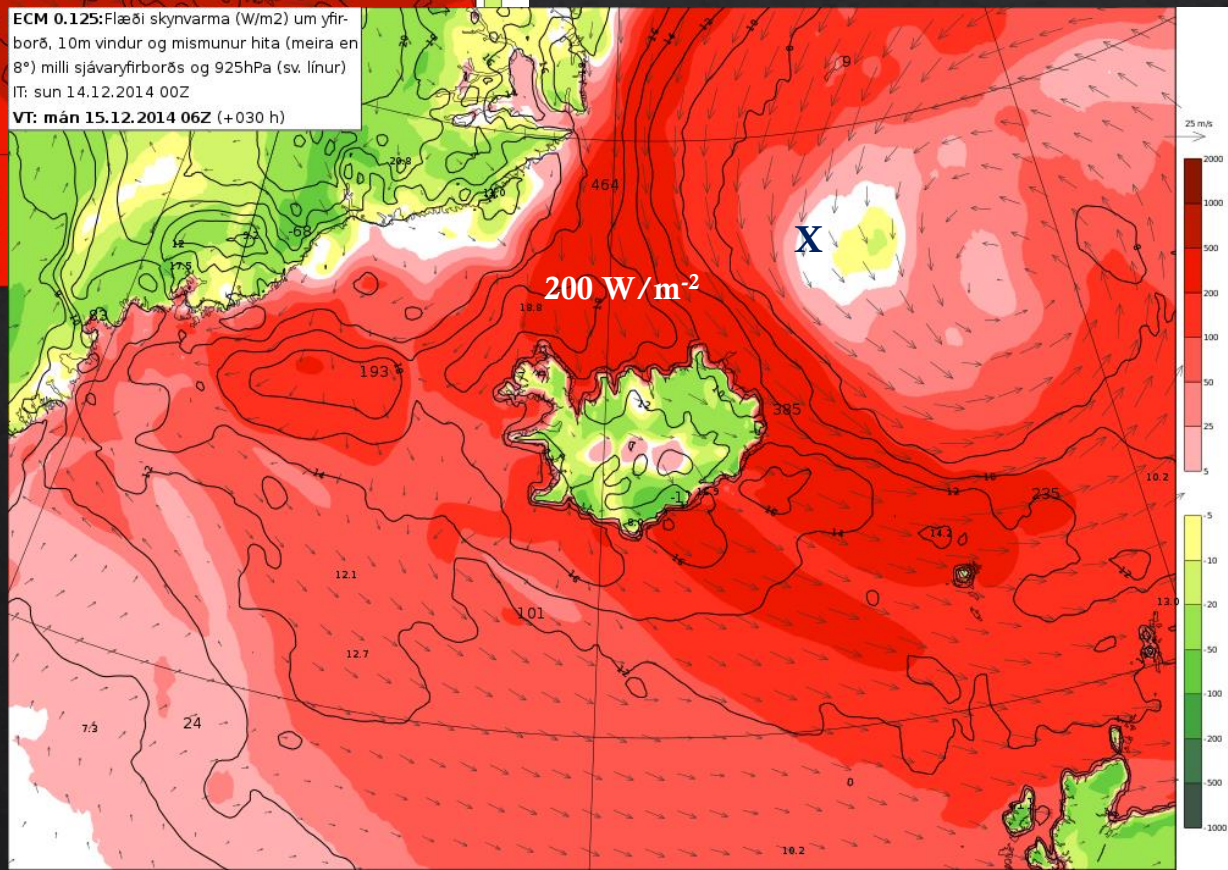

Skinvarmaflæði

Hitaflæði norður af Íslandi:
200 W/m^{-2} + 200 W/m^{-2}

Baujustaðsetning:
0 W/m^{-2} + 10 W/m^{-2}

Samantekt

- Drekabaujan safnaði sjaldgæfum veðurupplýsingum
- ERA-Interim er í nokkuð góðu samræmi við mælingar
- Hitaflæði að jafnaði ekki mikið en þó toppar
- Hitaflæði líklega meira vestar