

Sófareglan um brunagadd og hitasævækju

Guilhem Mollard og Haraldur Ólafsson



Gögn

- Mælingar frá nokkrum veðurstöðvum 1979-2019 með frávikum og götum
- ERA5
- HYSPLIT

Við hvaða aðstæður verður mjög hýtt eða kalt?

Kuldakast

Aðstreymi kalds massa



Útgeislun



Hitabylgja

Aðstreymi hlýs massa



Fleira: dulvarmi, hlýr sjór, raki

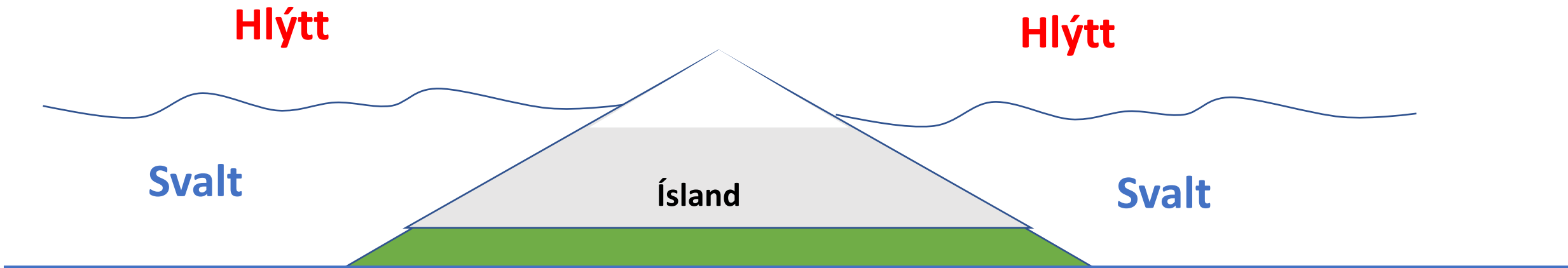
Niðurstreymi
↓ ↓ ↓
HLÝR MASSI



Sólgeislun

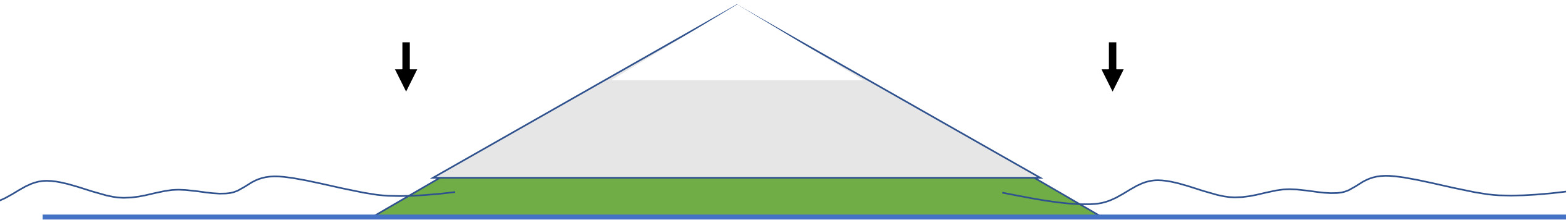


Hvernig útvega má hitabylgju að sumri?

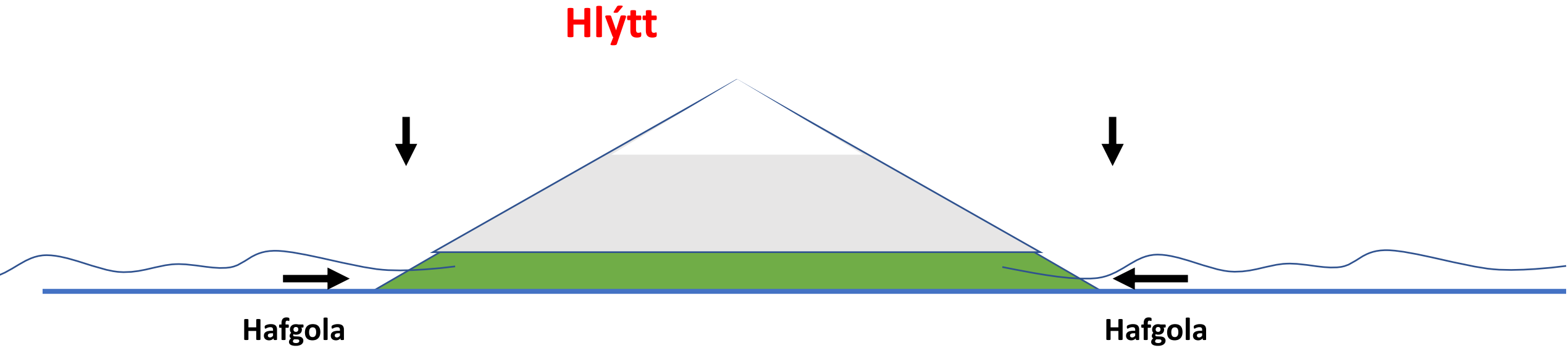


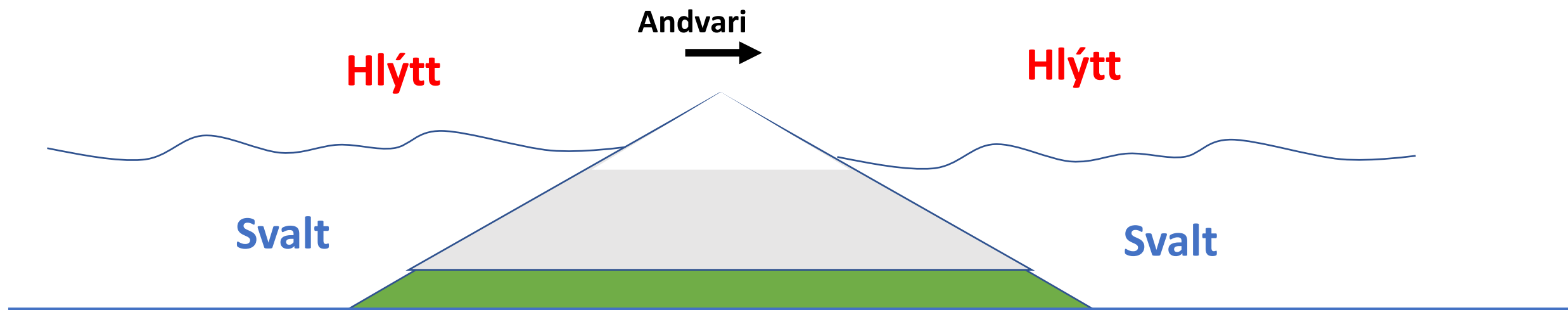
Niðurstreymi?

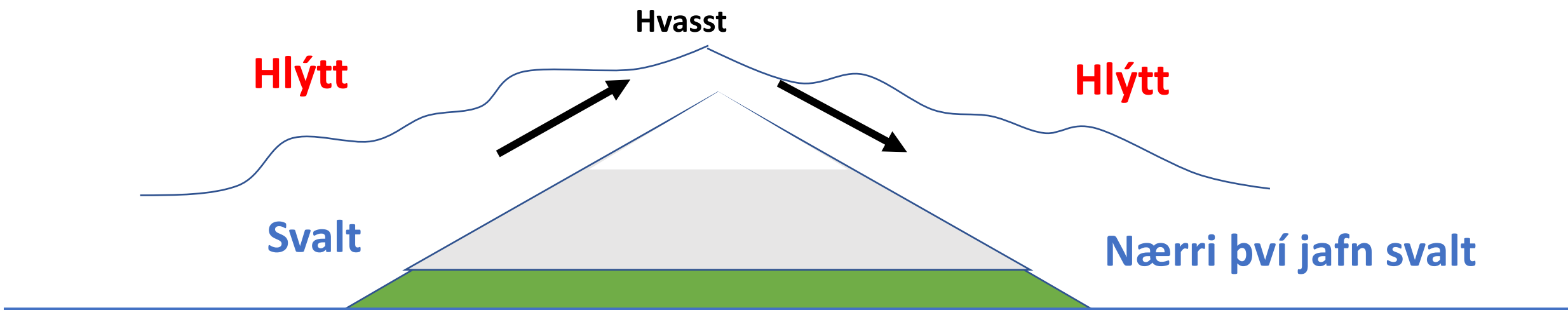
Hlýtt



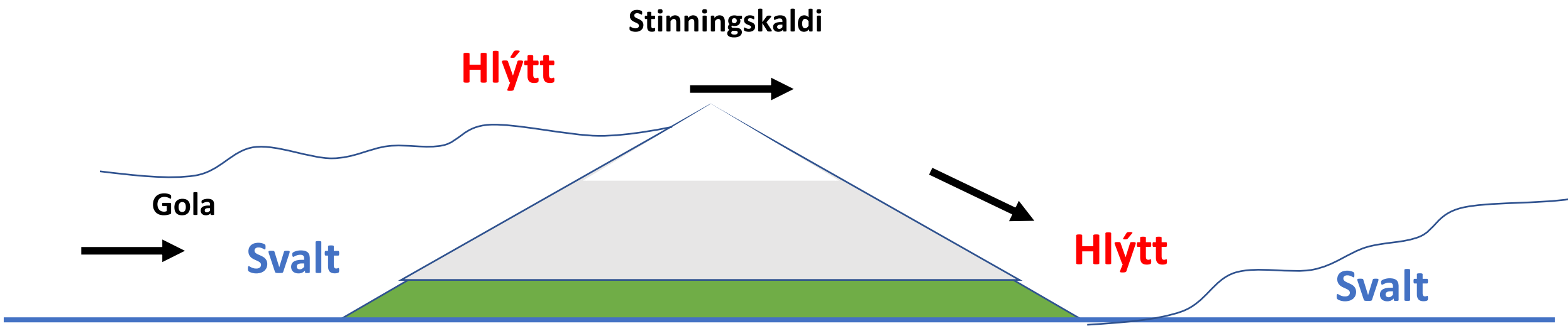
Það andar köldu af sjónum







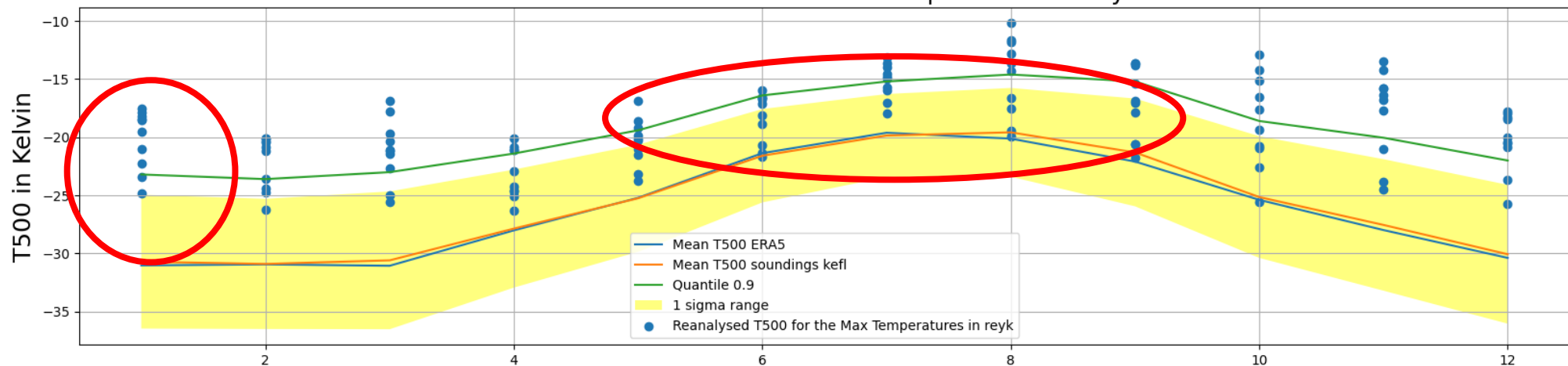
Vindur þarf að vera nógu hvass til að gefa hnjúkaþey, en ekki svo hvass að kaldi massinn drífi yfir



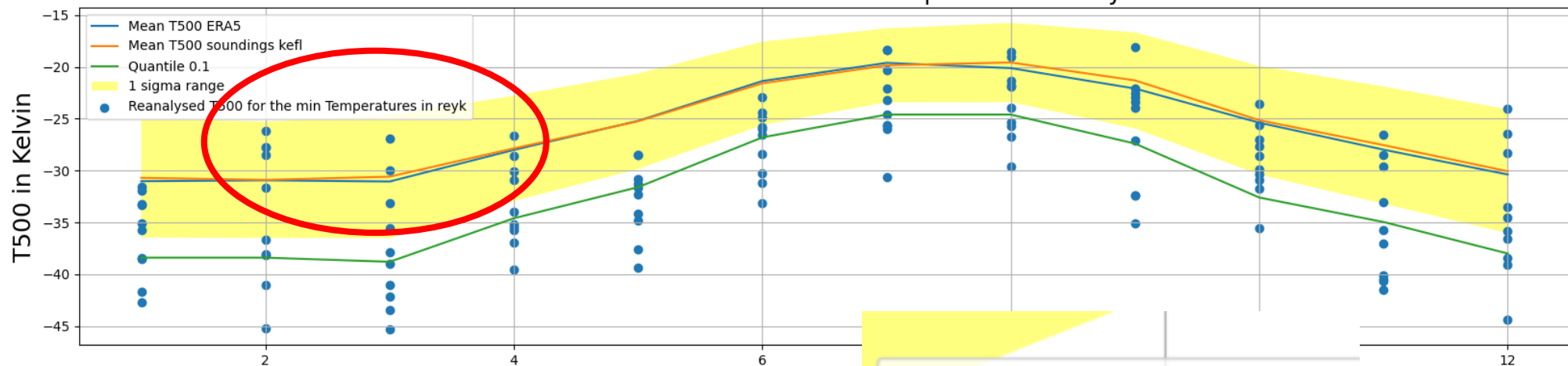
T í 500 hPa þegar hlýtt er við jörð

Reykjavík

T500 associated with the max temperatures in Reyk



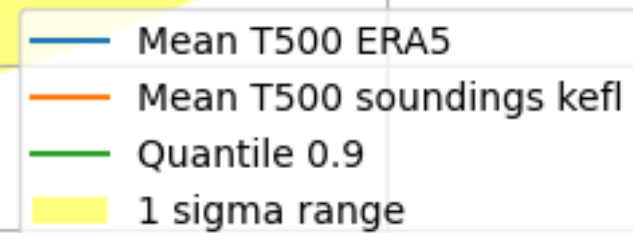
T500 associated with the min temperatures in Reyk



T í 500 hPa þegar kalt er við jörð

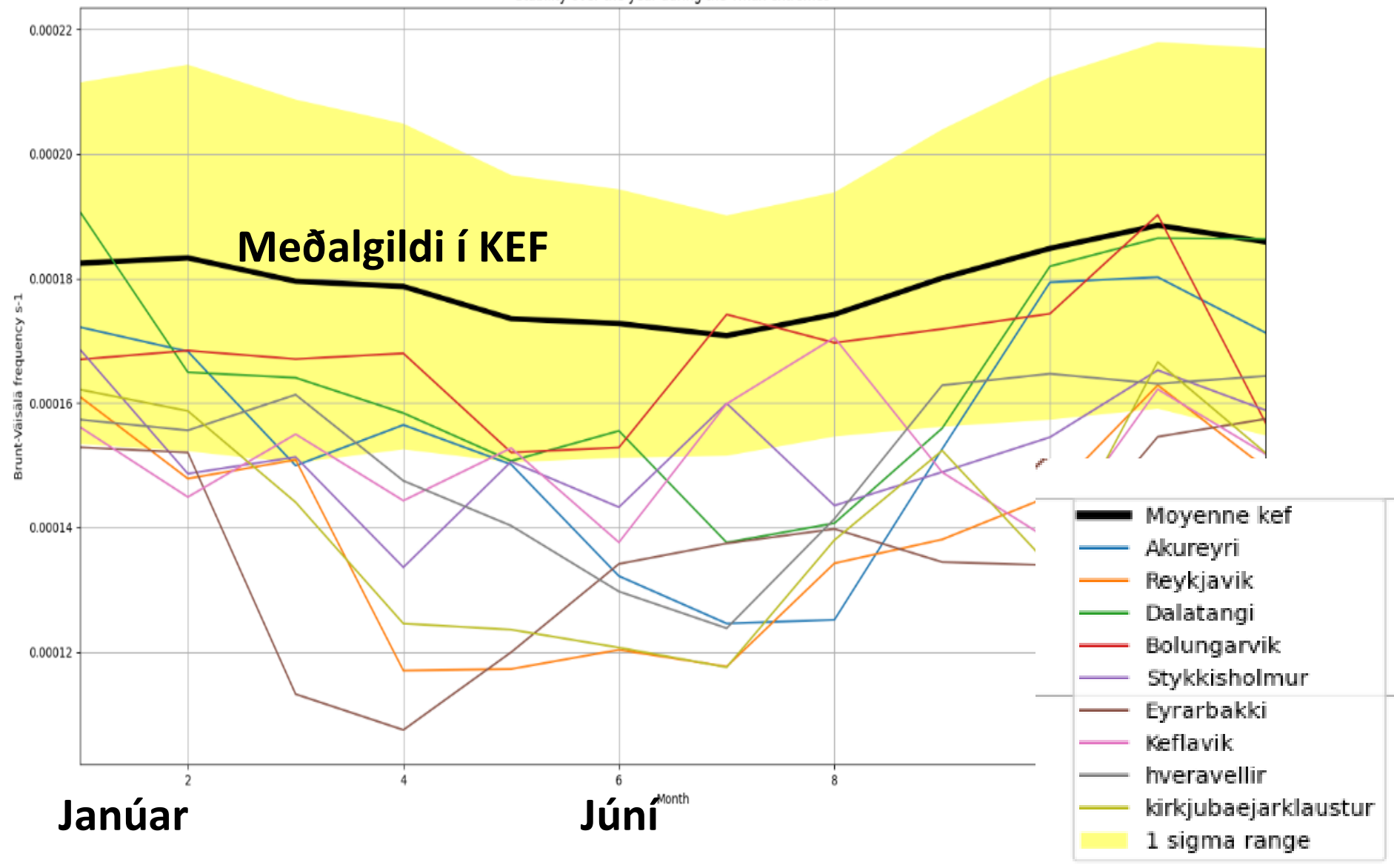
Jún

Des



Stöðugleiki í hitabylgjum (1000-500 hPa, 1/s)

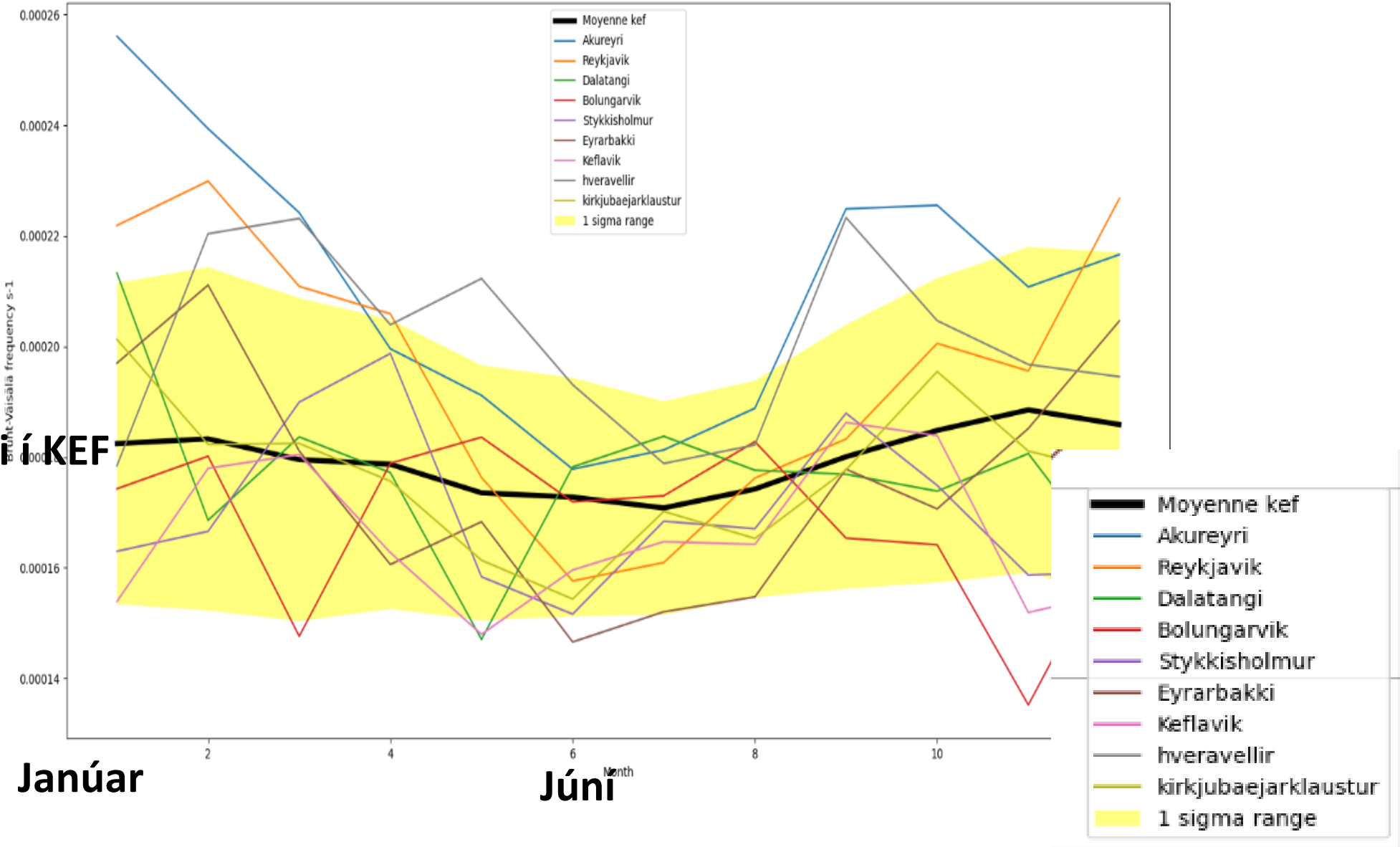
Stability over the year during the Tmax extremes



Stöðugleiki í kuldaköstum (1000-500 hPa, 1/s)

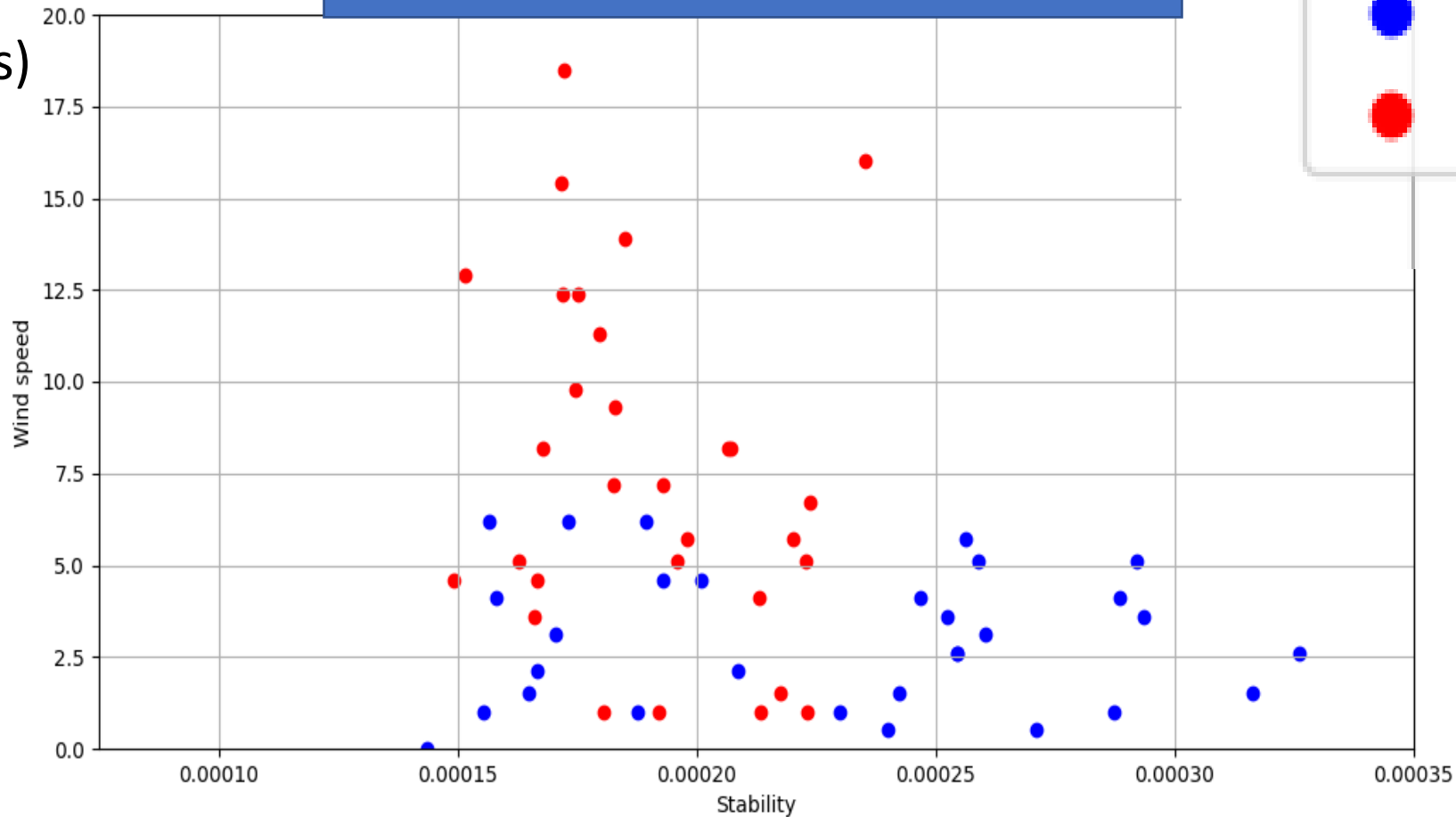
Stability over the year during the Tmin extremes

Meðalgildi í KEF



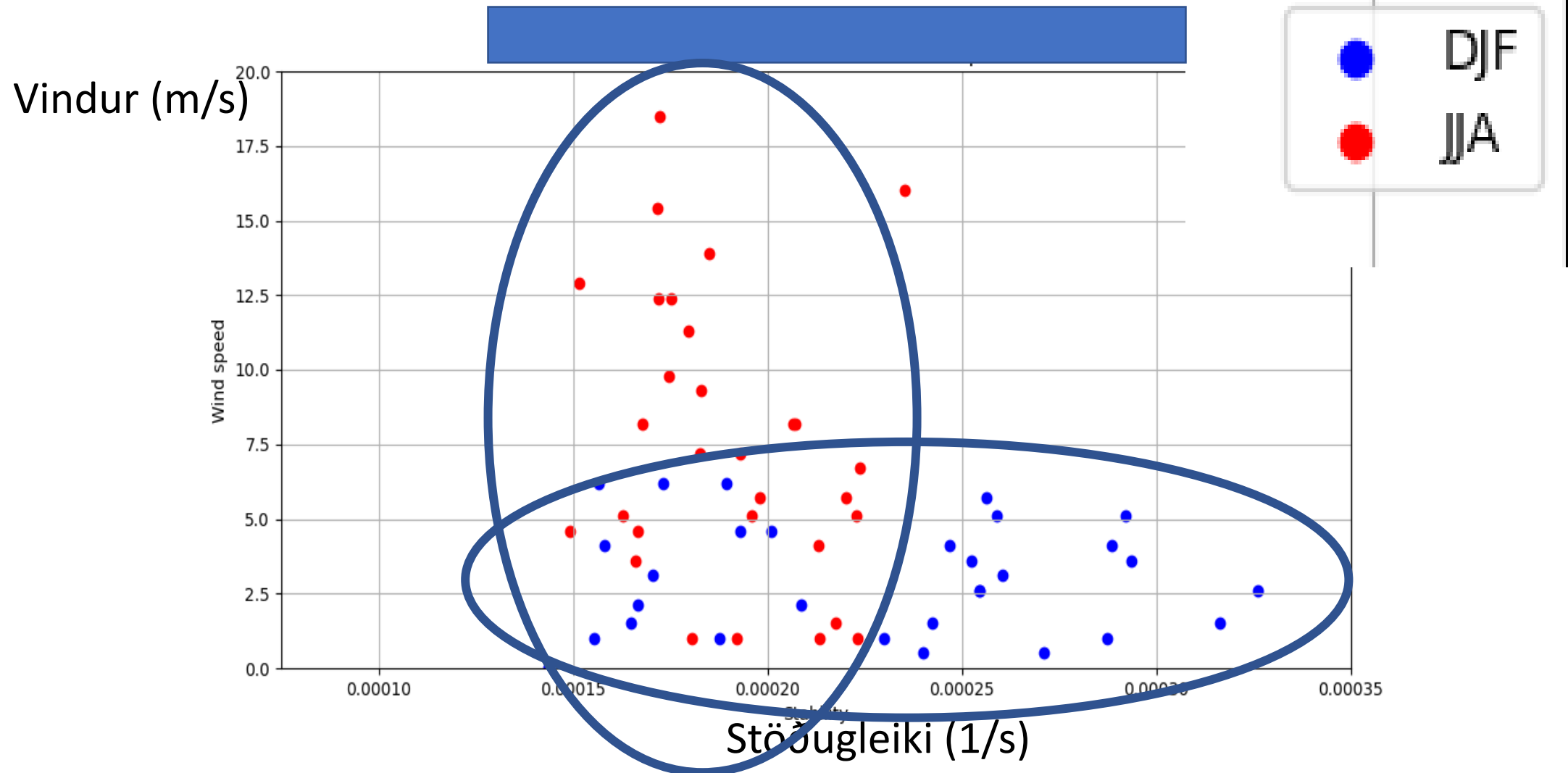
Hveravellir - kuldaköst

Vindur (m/s)

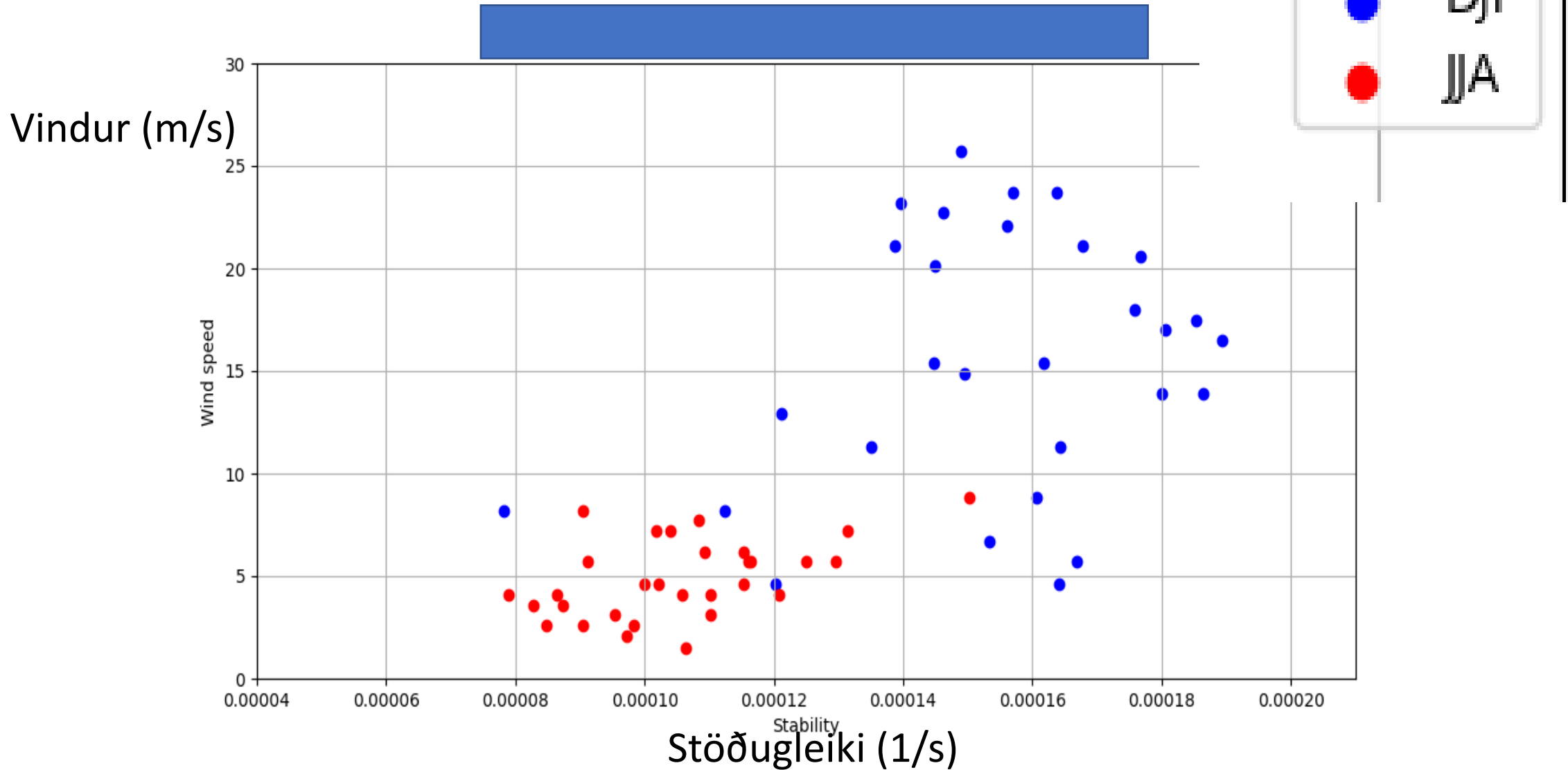


Stöðugleiki (1/s)

Hveravellir - kuldaköst

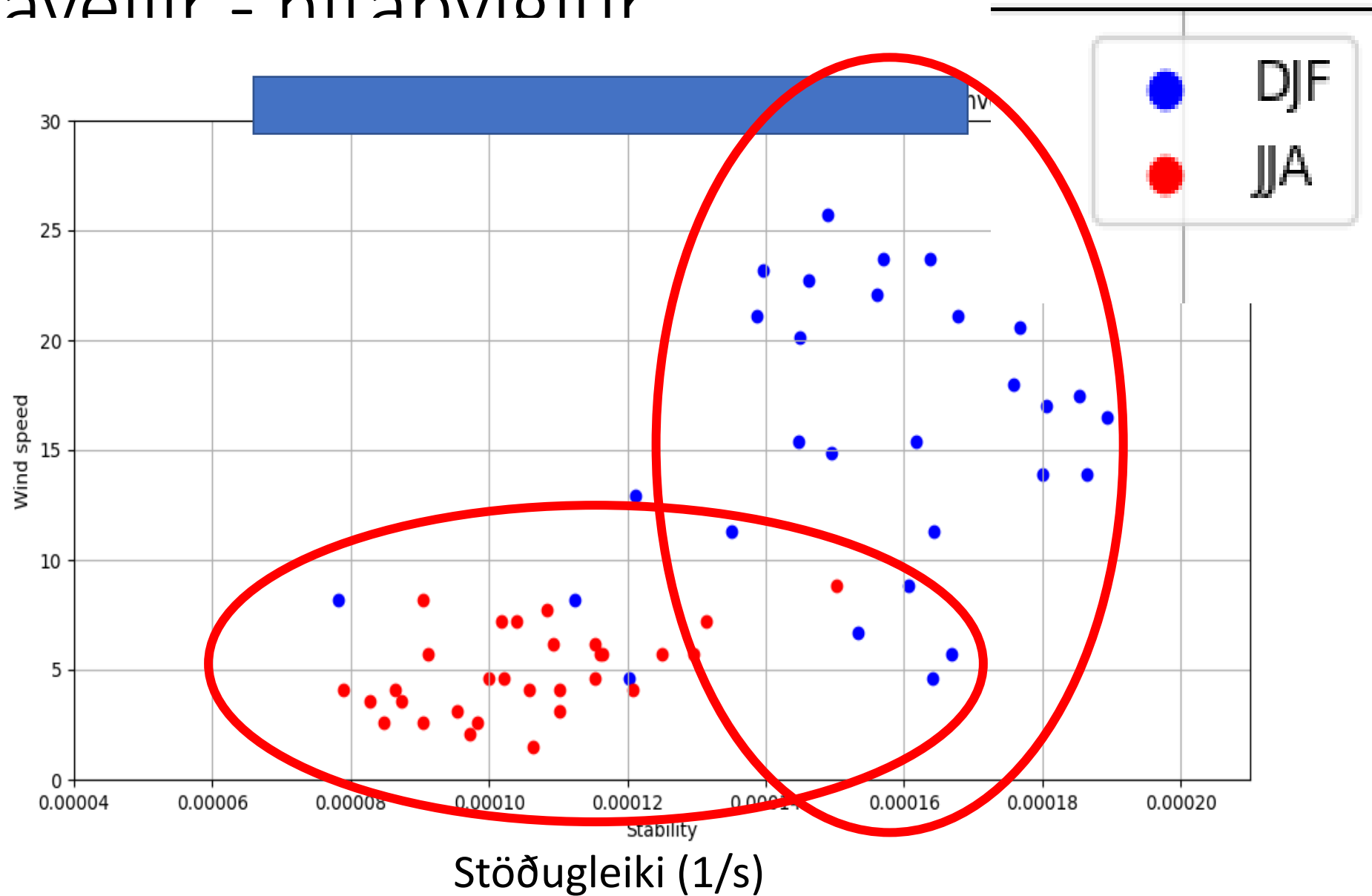


Hveravellir - hitabylgiur



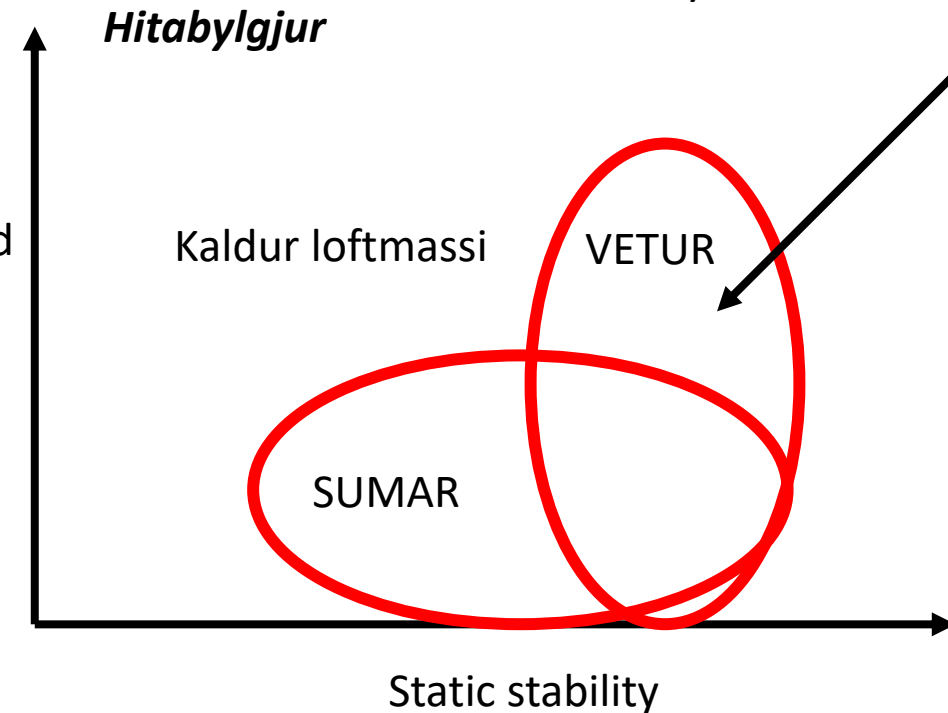
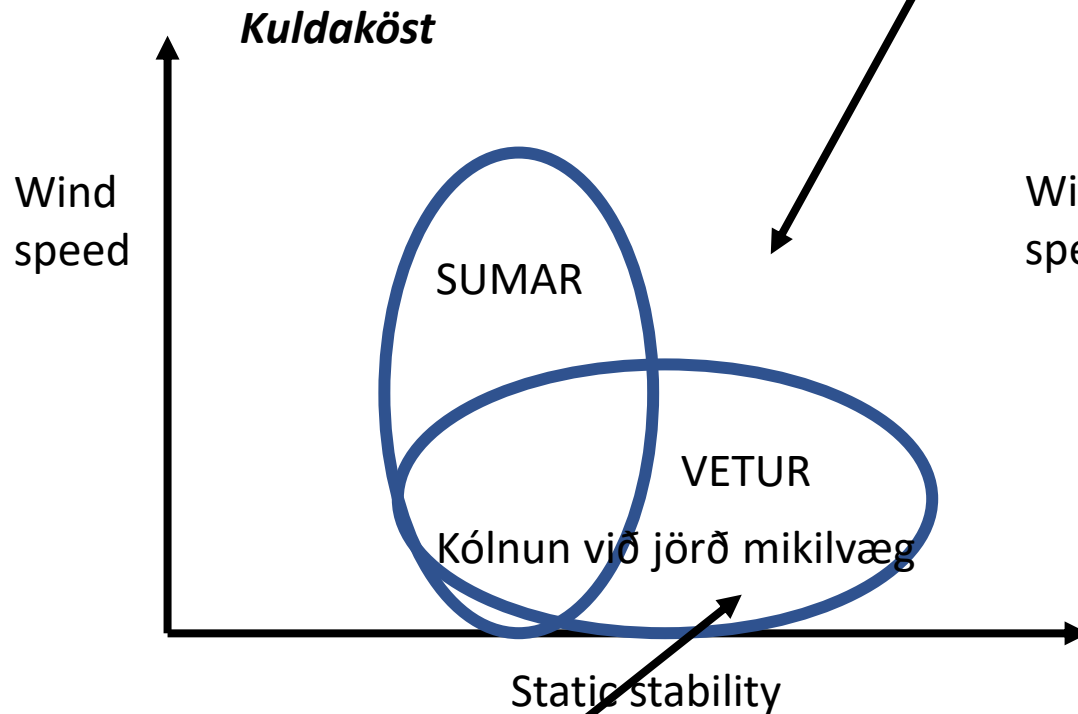
Hveravællir - hitahvlosiur

Vindur (m/s)



Hlýr loftmassi, vindur af sjó, lóðrétt blöndun eða hnjúkaþeyr

- Kaldur loftmassi nær yfir fjöll ef það er hvasst
- Enginn ofurhiti við yfirborðið



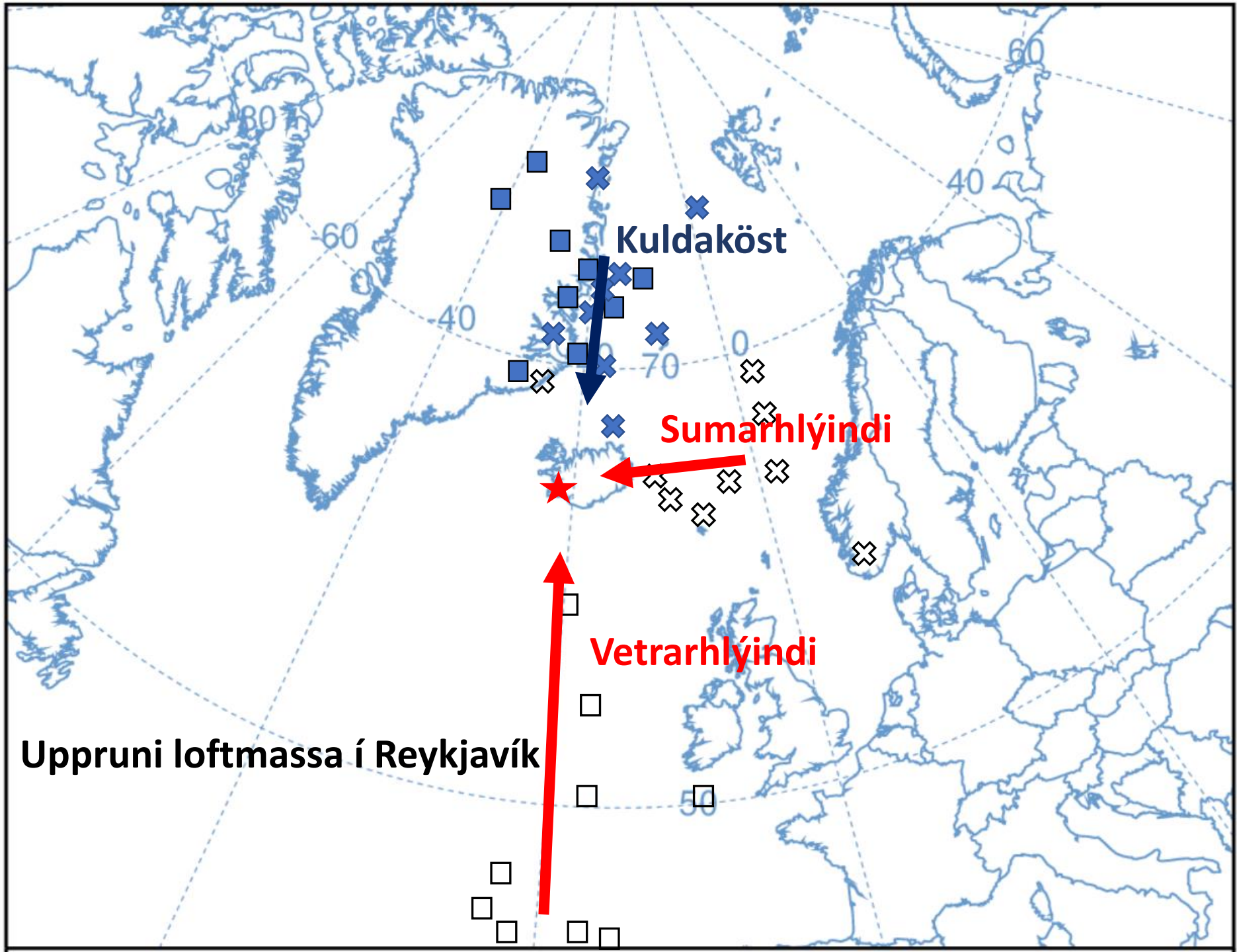
Heiðríkja og útgeislun þegar niðurstreymi er í 500-800 hPa

Sófaritið – *The unified sofa theory of temperature extremes*



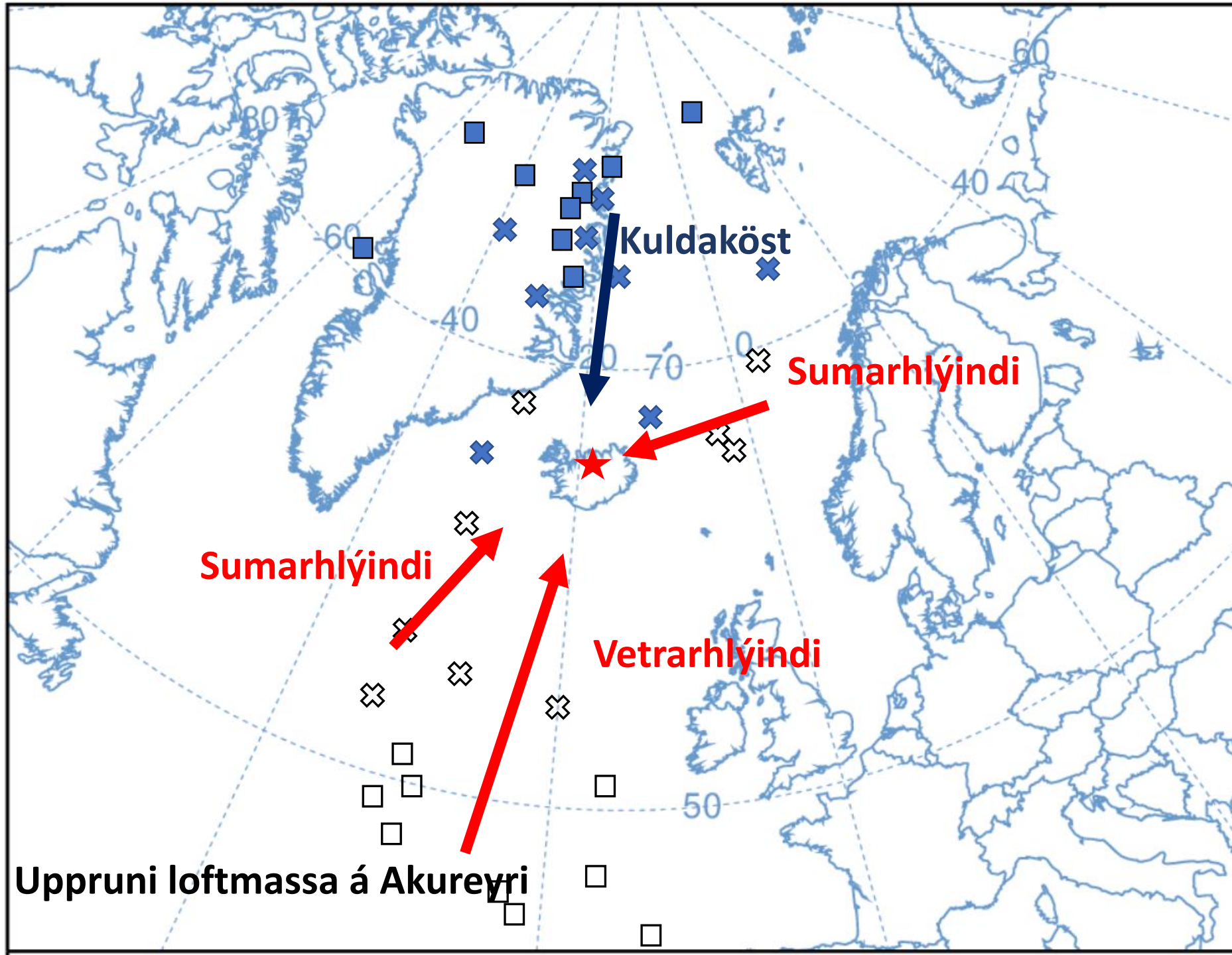
Sófareglan

- ⊗ Tmax JJA
- Tmax DJF
- ⊗ Tmin JJA
- Tmin DJF



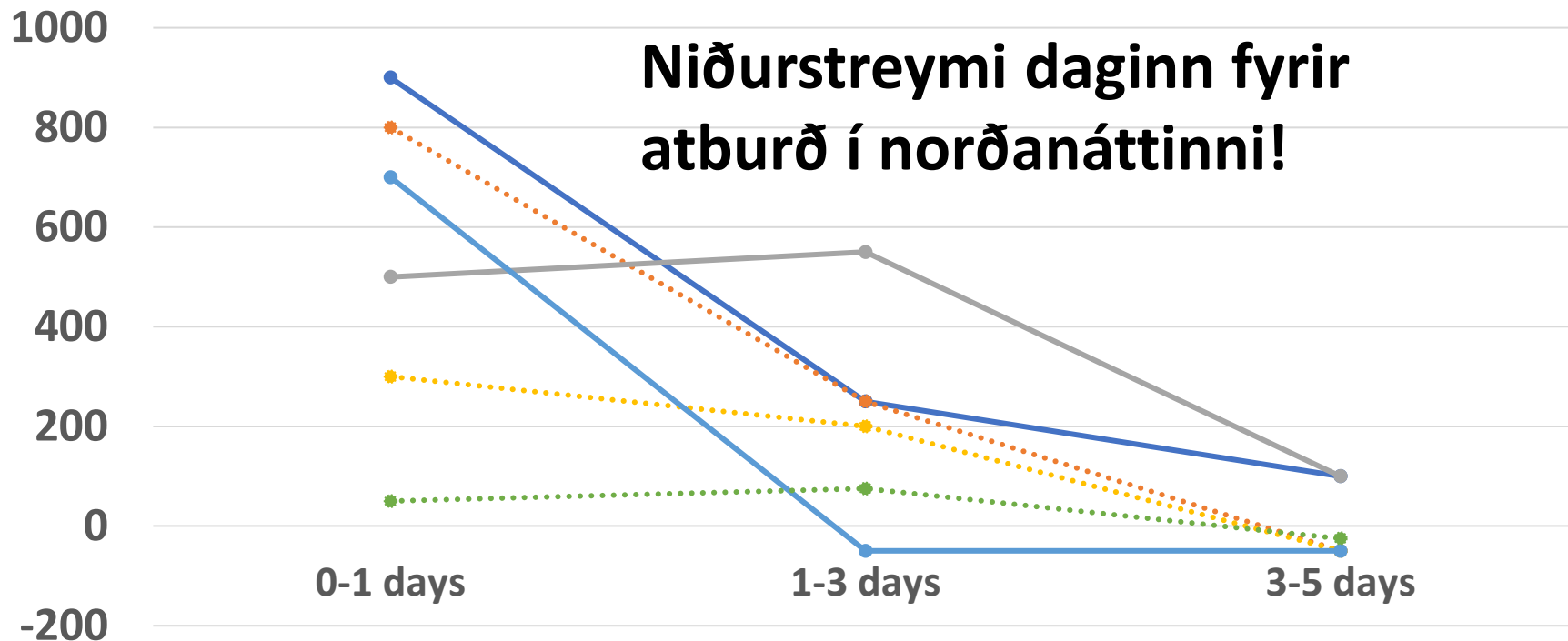
- ⊗ Tmax JJA
- Tmax DJF
- ⊗ Tmin JJA
- Tmin DJF

Akureyri



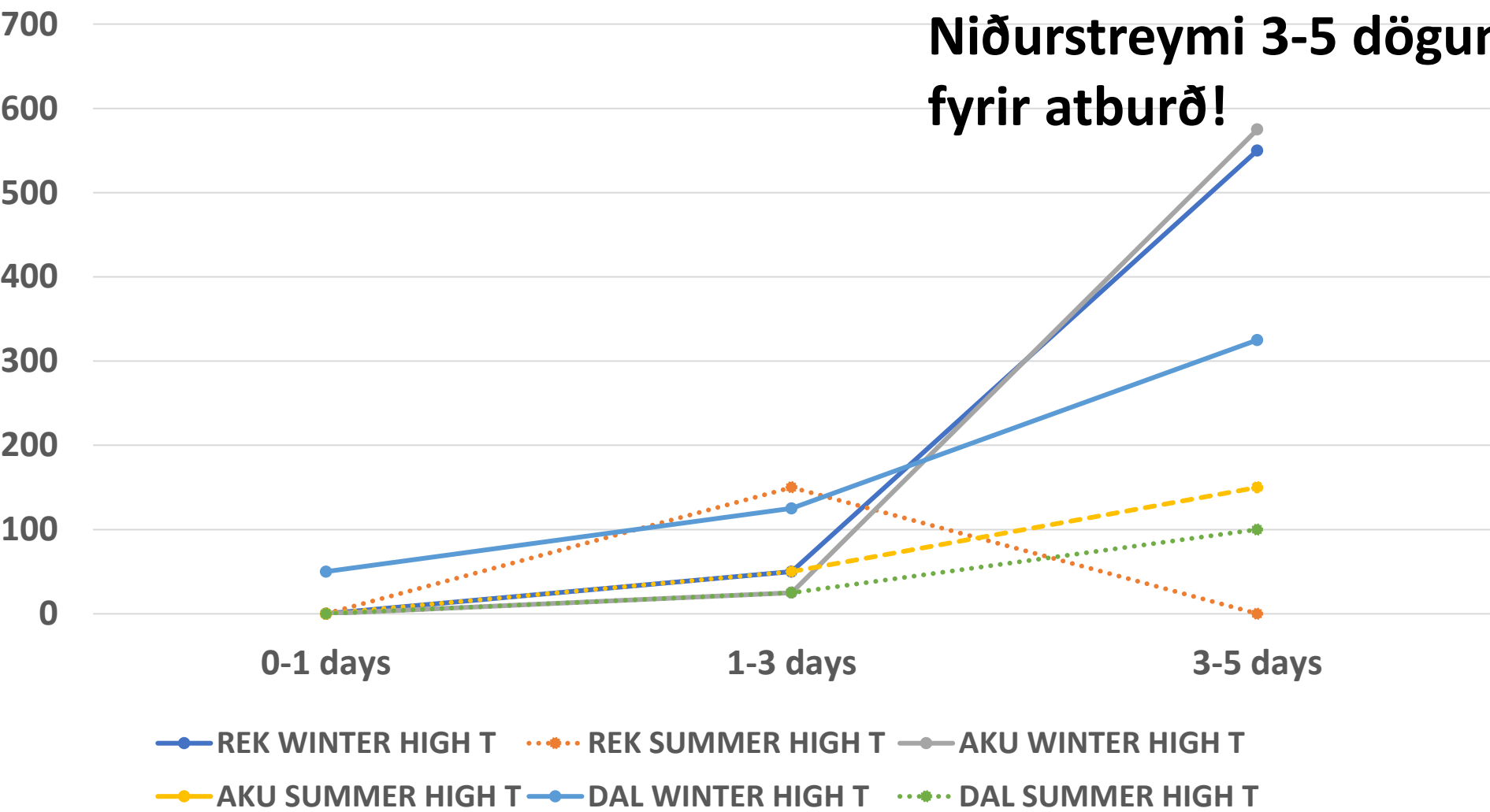
Niðurstreymi fyrir kuldakast (m/24h)

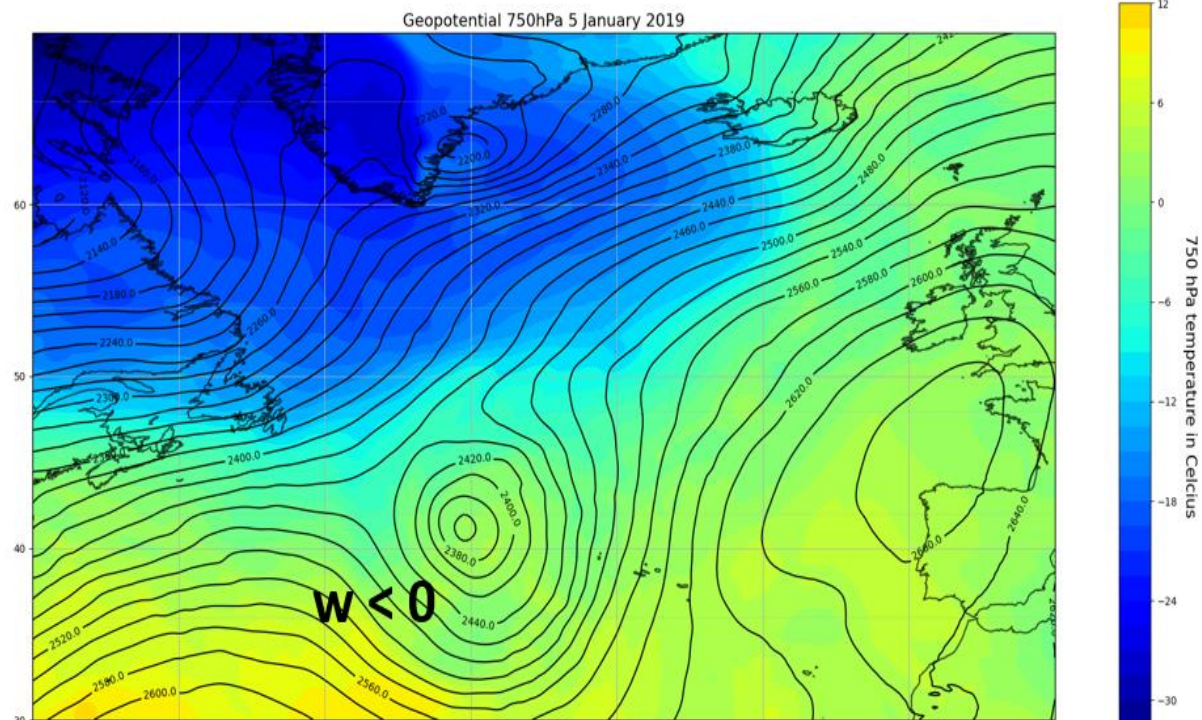
**Niðurstreymi daginn fyrir
atburð í norðanáttinni!**



REK WINTER LOW T REK SUMMER LOW T AKU WINTER LOW T
AKU SUMMER LOW T DAL WINTER LOW T DAL SUMMER LOW T

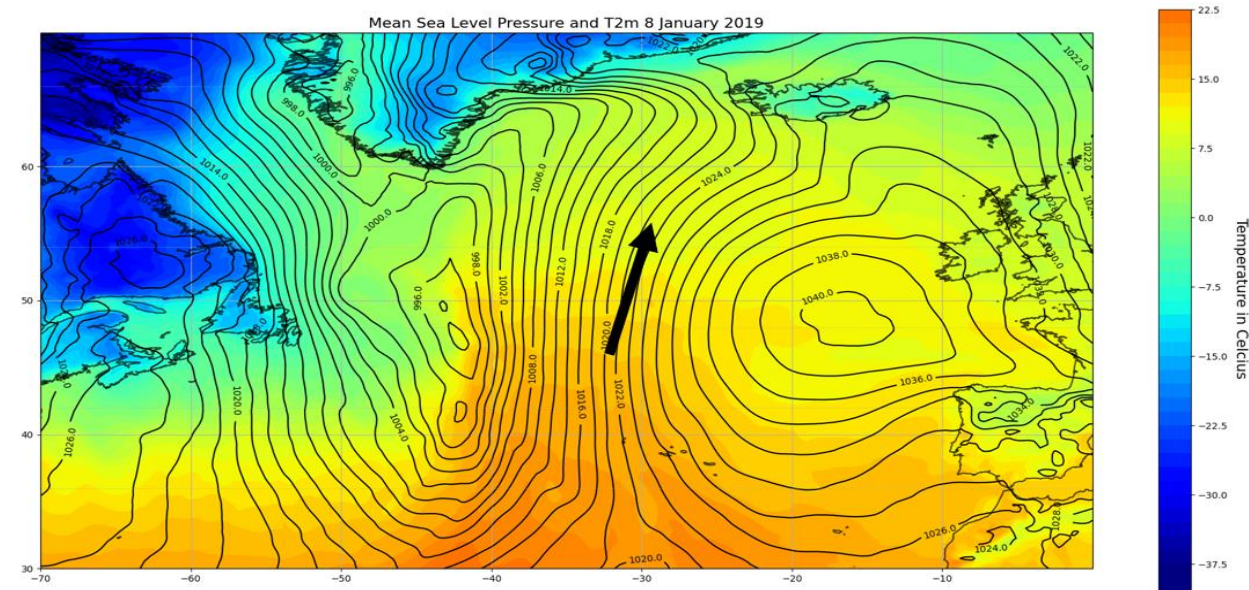
Niðurstreymi fyrir hitabylgju (m/24h)

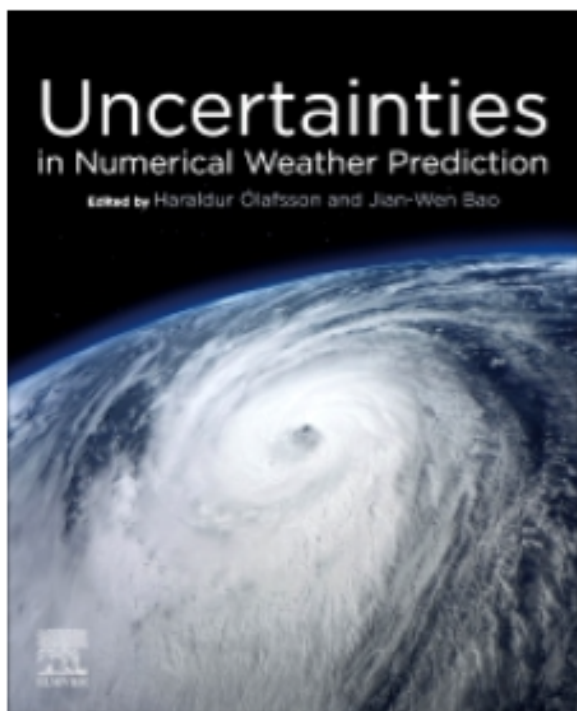




Geopot. & T í 750 hPa við t-96 klst.

MSLP & T í 2m hPa við t-24 klst.





Uncertainties in Numerical Weather Prediction

1st Edition

Um veðursins óvissa tíma

☆☆☆☆☆ [Write a review](#)

Editors: Haraldur Olafsson, Jian-Wen Bao

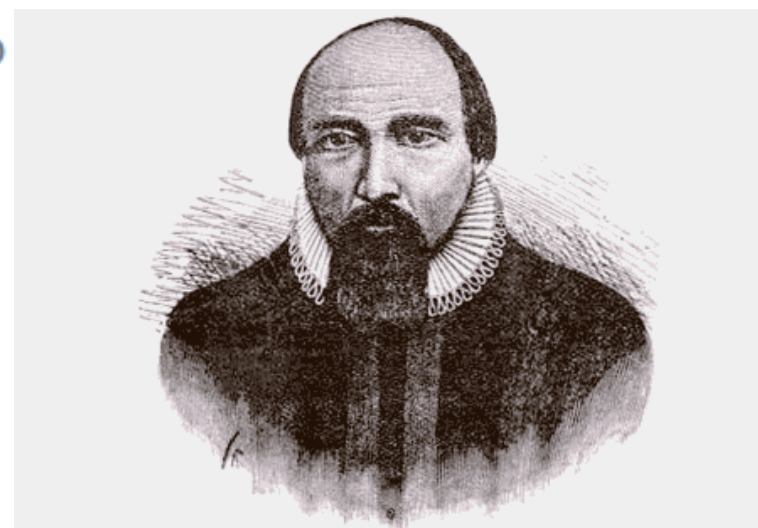
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DJF	T _{downstream} (°C)	T _{upstream} (°C)	ΔT (°C)
Reykjavik (Eyrarbakki)	9.9	6.7	3.2
Akureyri (Eyrarbakki)	13.3	6.9	6.4
Dalatangi (Eyrarbakki)	16.0	6.7	9.3

Munurinn vindmegin og hlémegin Íslands

JJA	T _{downstream} (°C)	T _{upstream} (°C)	ΔT (°C)
Reykjavik (Dalatangi)	22.1	10.4	11.7
Akureyri (Eyrarbakki)	24.2	13.5	10.7
Dalatangi (Eyrarbakki)	20.4	11.4	9.0

Ítarefni:
Petersen & Ólafsson, á leið úr skúffu

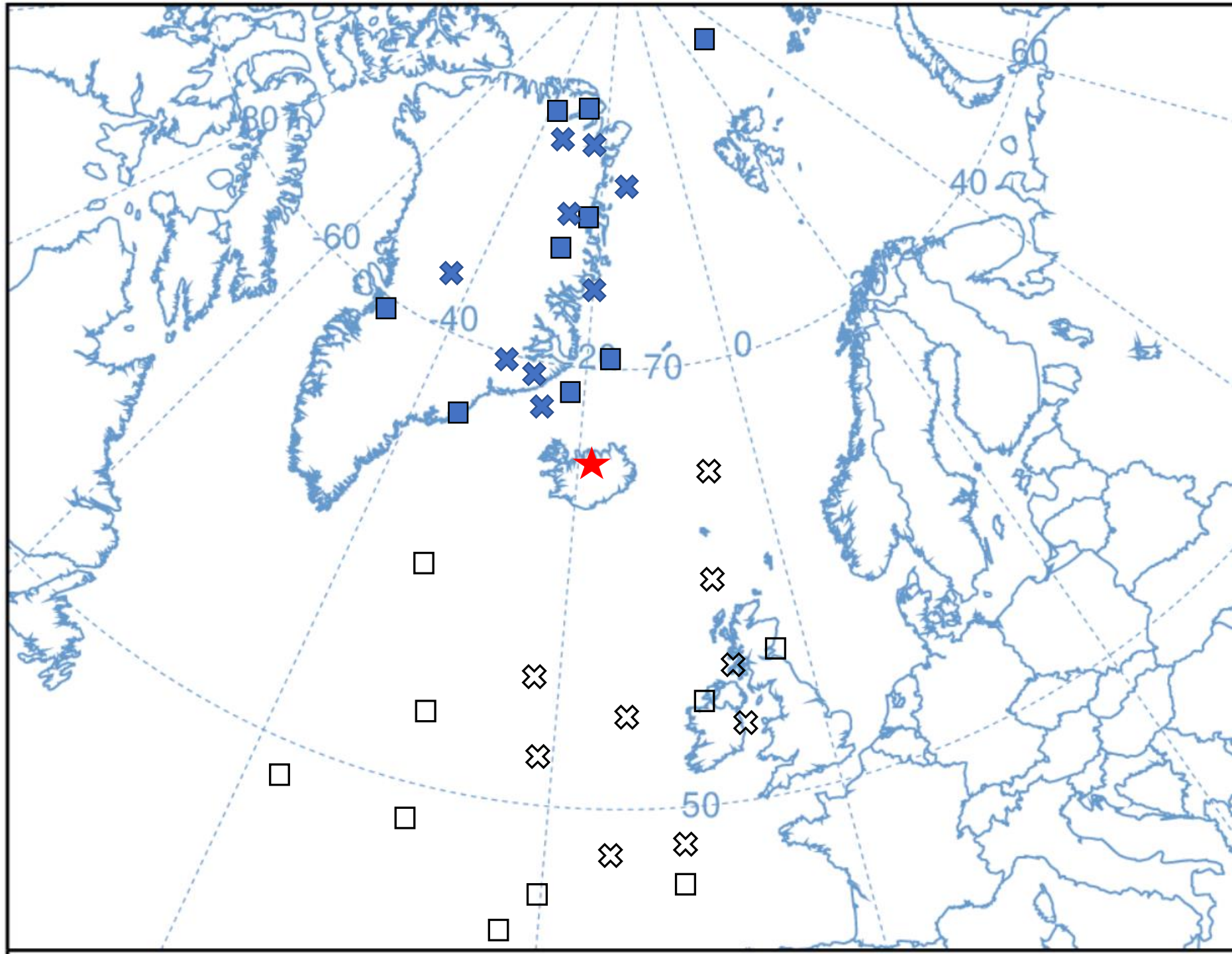
Þökk fyrir áheyrnina

Helstu niðurstöður:

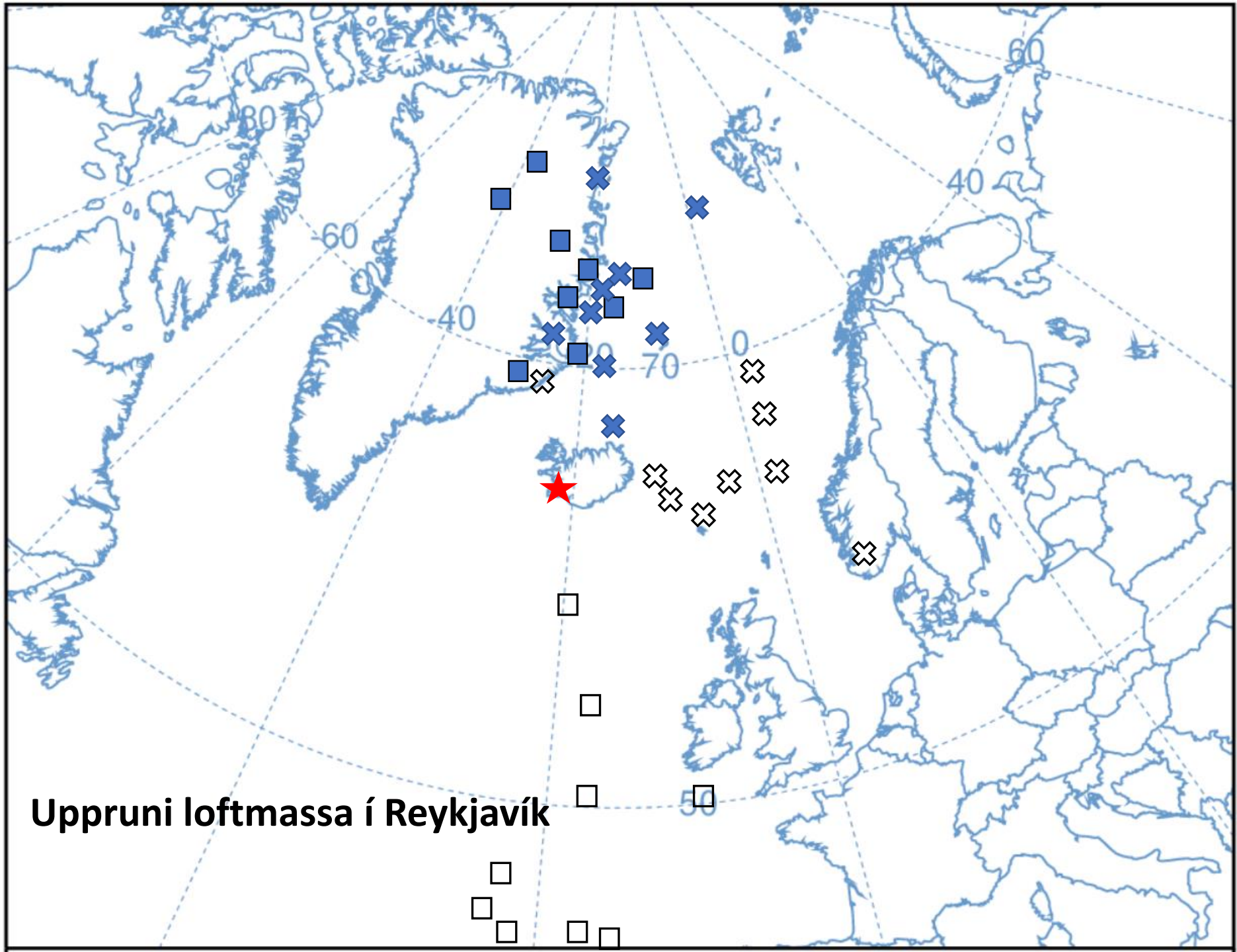
- Sófaritið um vind, stöðugleika og aftök í hita
- Niðurstreymi nokkrum dögum fyrir hitabylgjur
- Loft í kuldaköstum nánast alltaf frá A-Grænlandi (Breytinga von?)
- Niðurstreymi fyrir kuldakast

- ⊗ Tmax MAM
- Tmax SON
- ⊗ Tmin MAM
- Tmin SON

Akureyri



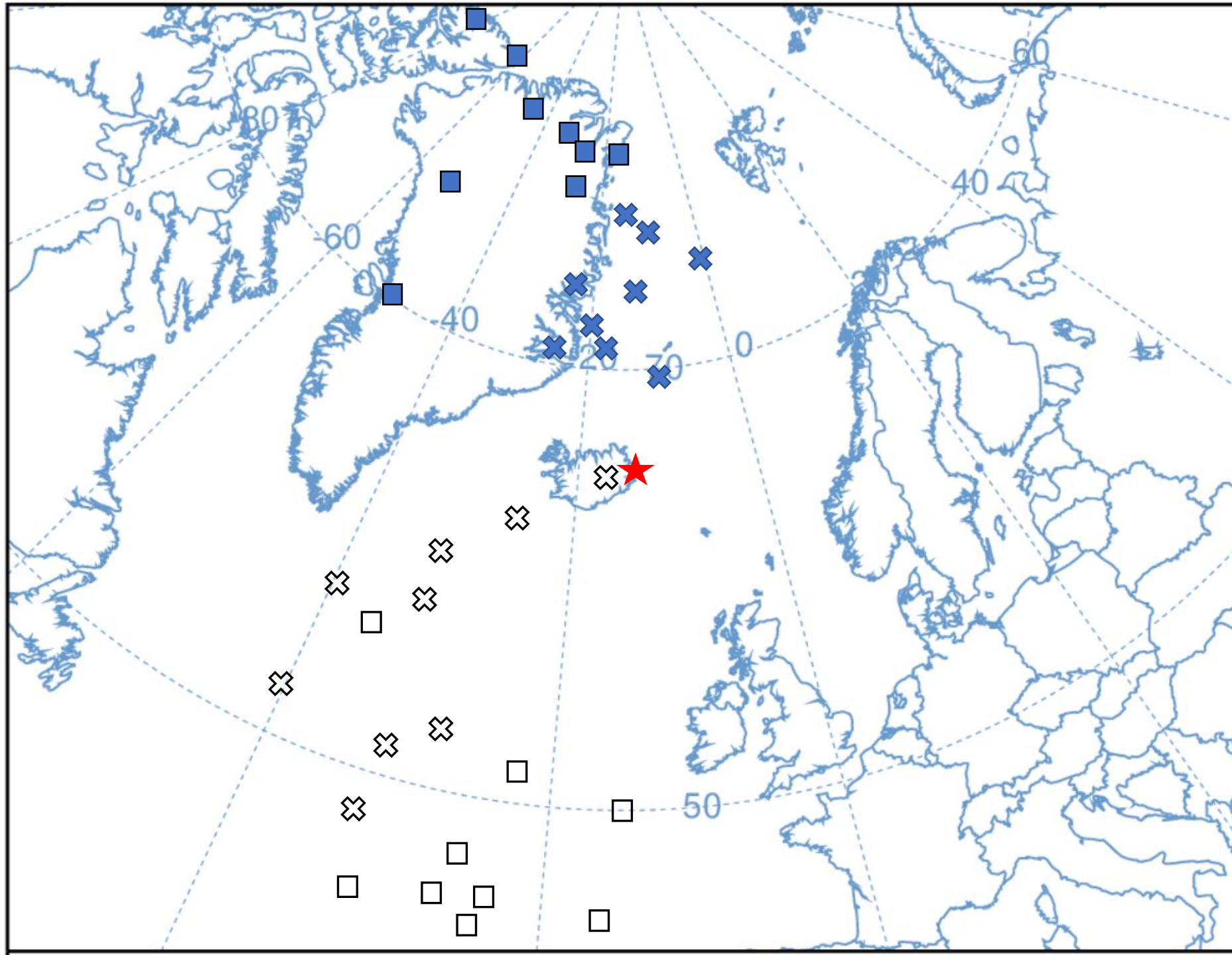
- ⊗ Tmax JJA
- Tmax DJF
- ⊗ Tmin JJA
- Tmin DJF



Uppruni loftmassa í Reykjavík

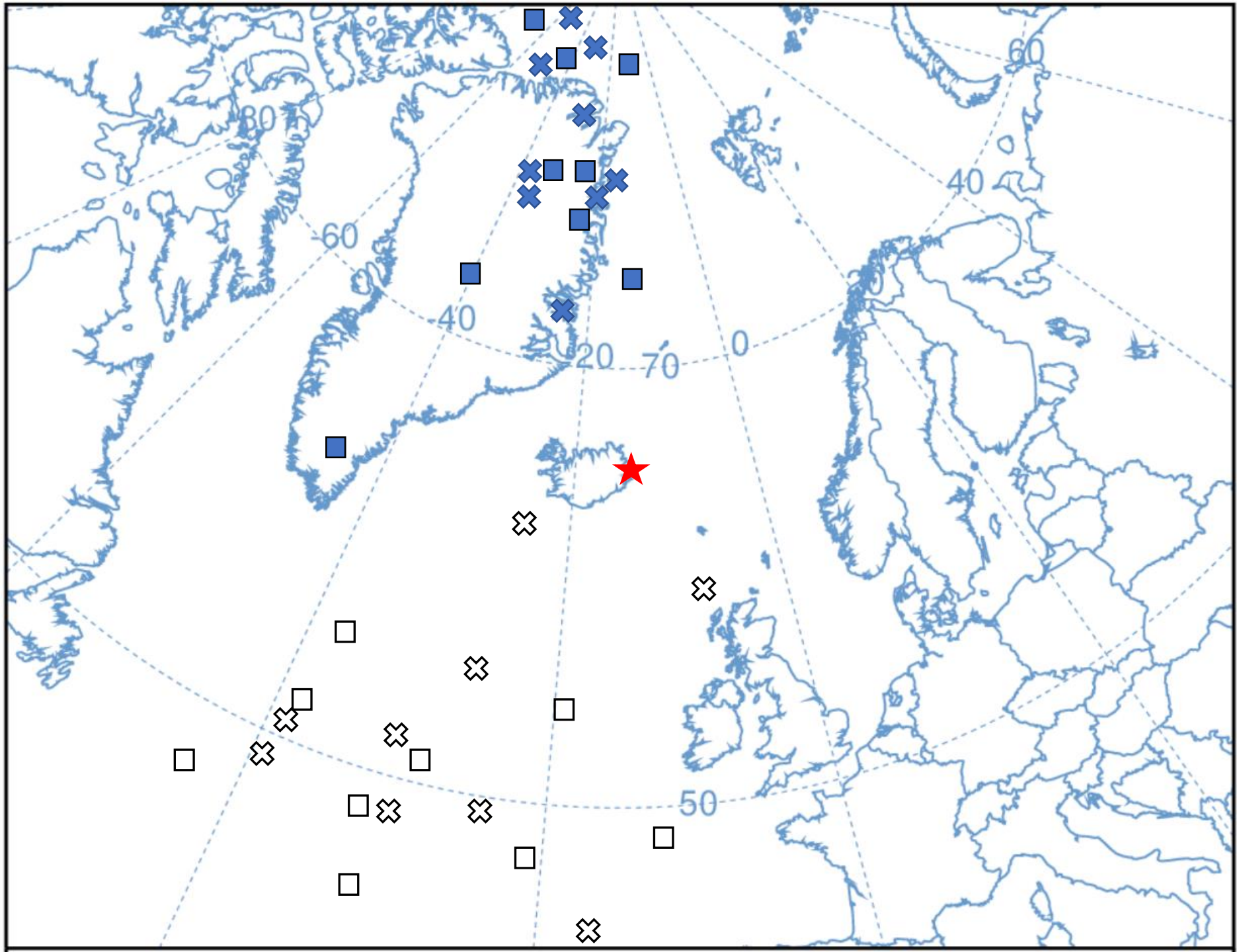
- ⊗ Tmax JJA
- Tmax DJF
- ⊗ Tmin JJA
- Tmin DJF

Dalatangi



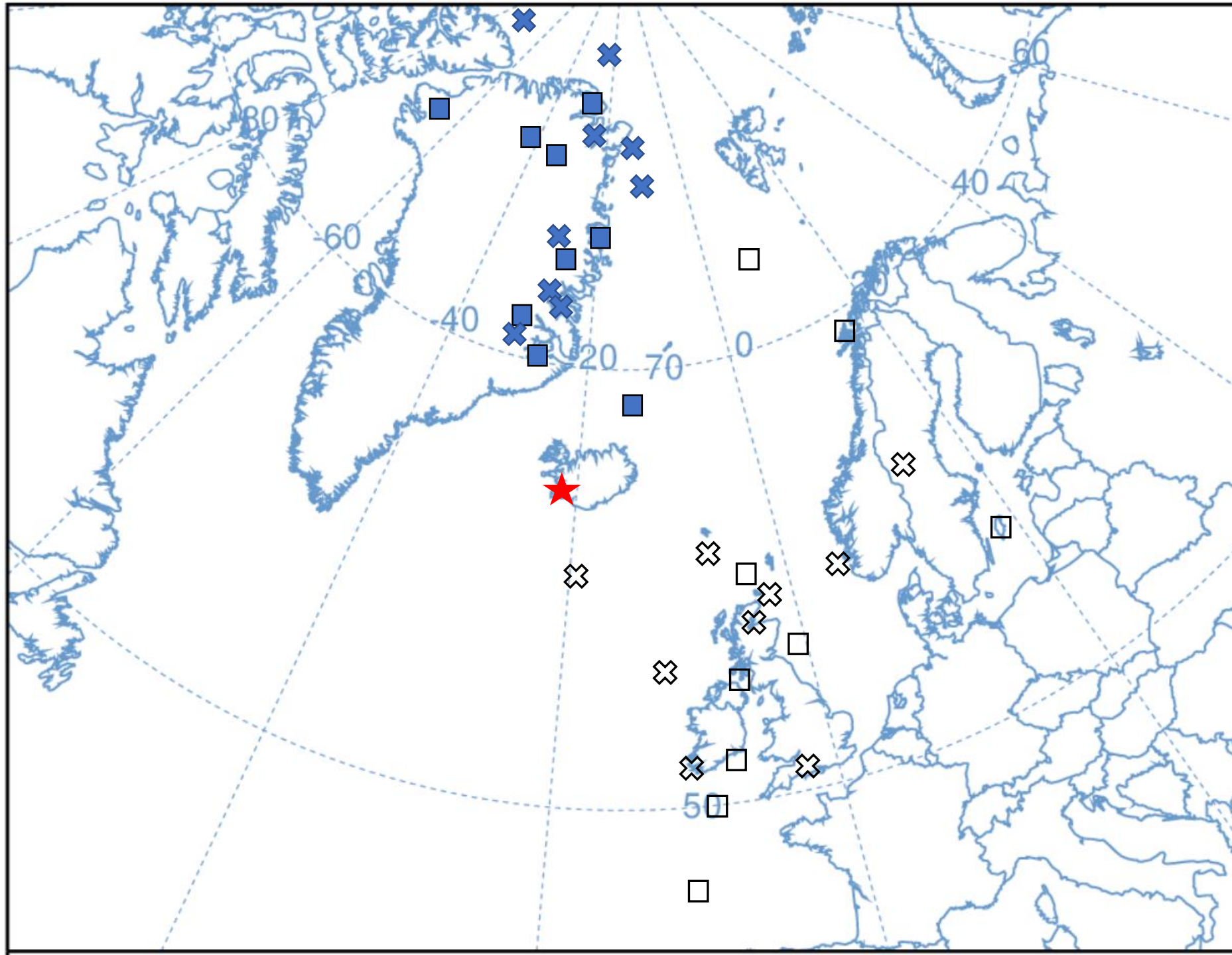
- ⊗ Tmax MAM
- Tmax SON
- ⊗ Tmin MAM
- Tmin SON

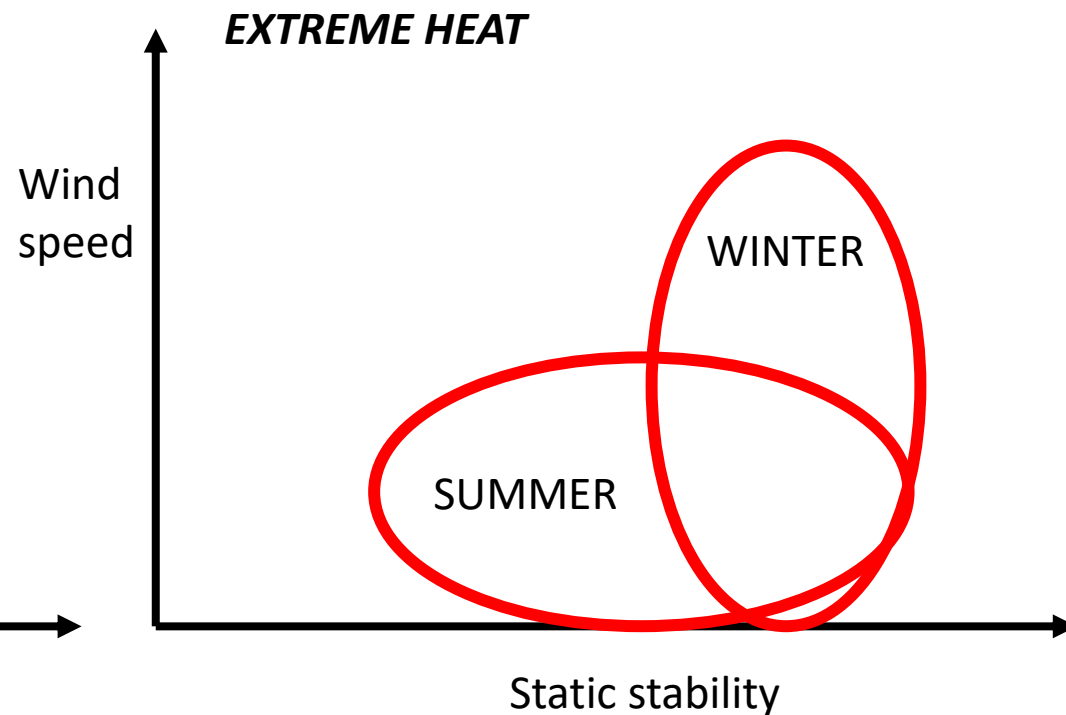
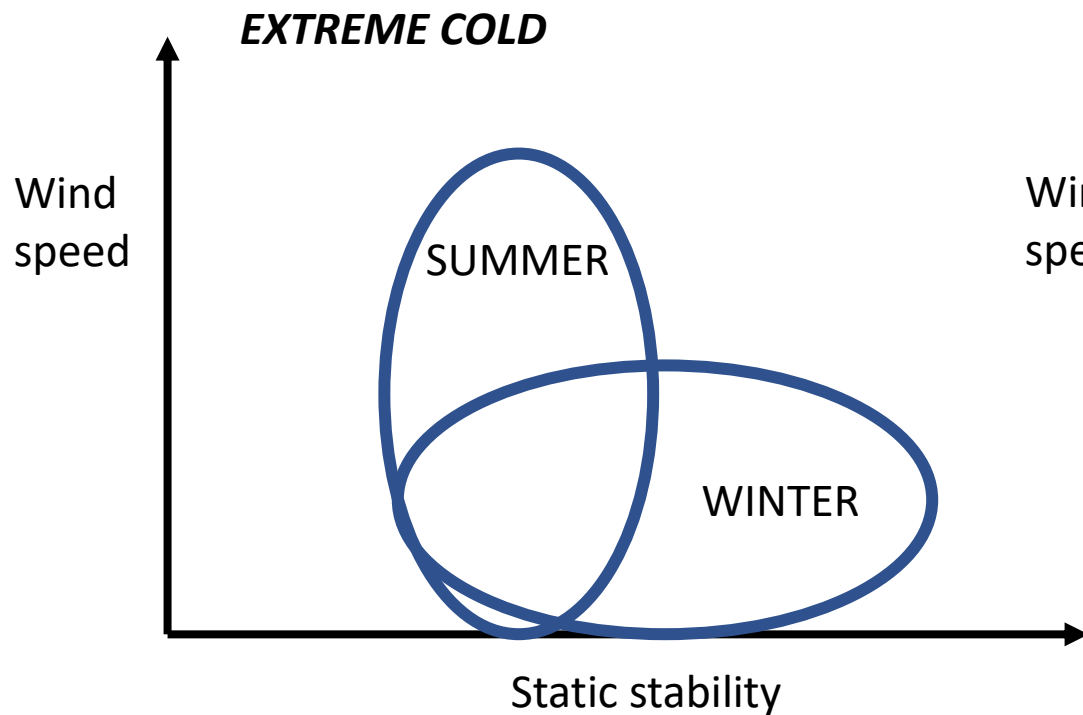
Dalatangi



- ⊗ Tmax MAM
- Tmax SON
- ⊗ Tmin MAM
- Tmin SON

Reykjavik





Sófareglan - Unified Sofa Theory of Temperature Extremes