

**GROWTH VARIABILITY OF THE GREENLAND SMOOTHCOCKLE *SERRIPES GROENLANDICUS*
AFFECTED BY GLACIER INDUCED CHANGES IN THE KONGSFJORDEN ECOSYSTEM**



Foto M. Schwanitz, AWI

**Jürgen Laudien
Martin Paar**

**Hamn i Svenja,
12th March 2014**

- Background and motivation
- Environmental parameters
- Cockle shell as archive of physical parameters
- Conclusions



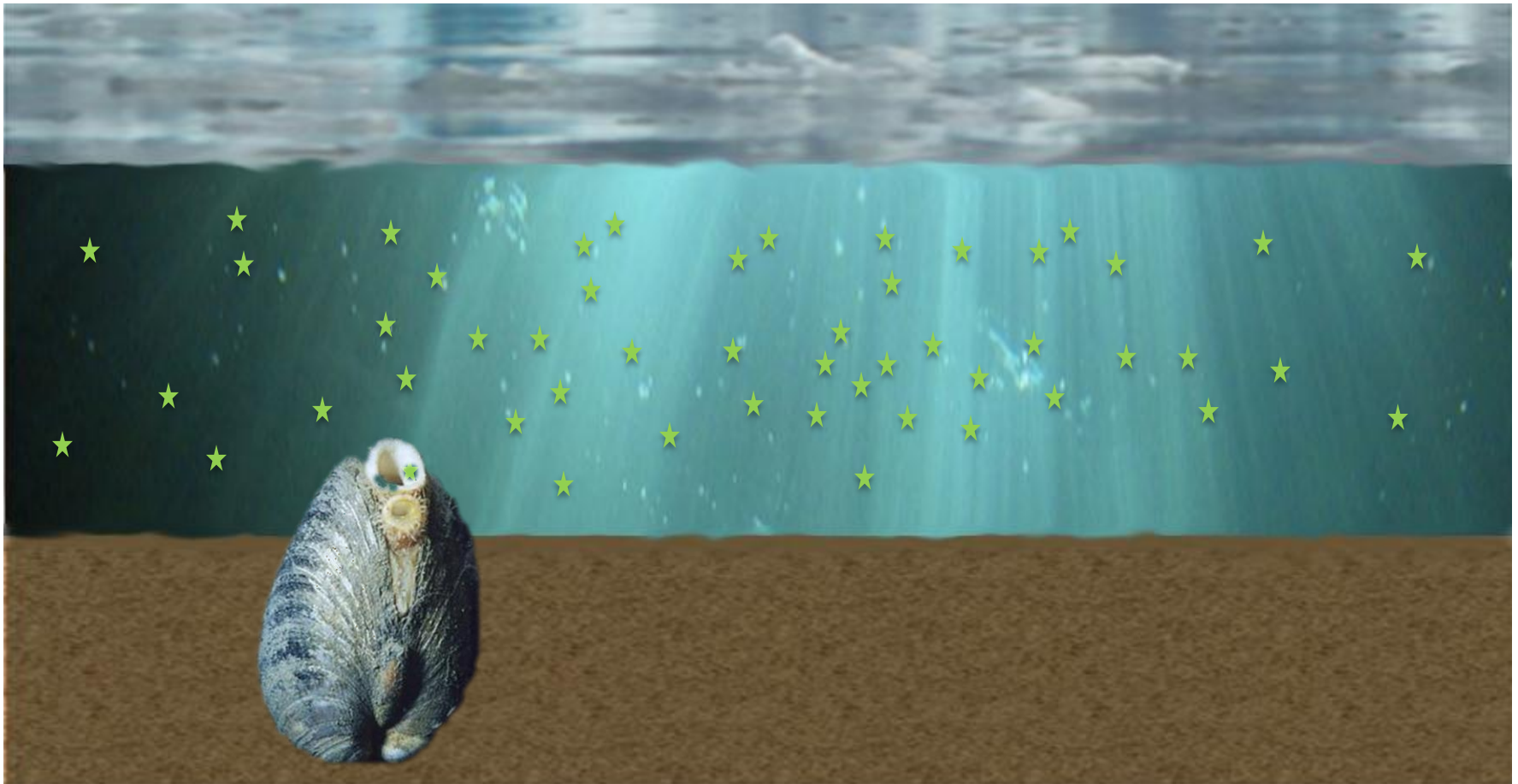
Foto P. Kerhervé,
Univ Perpignan



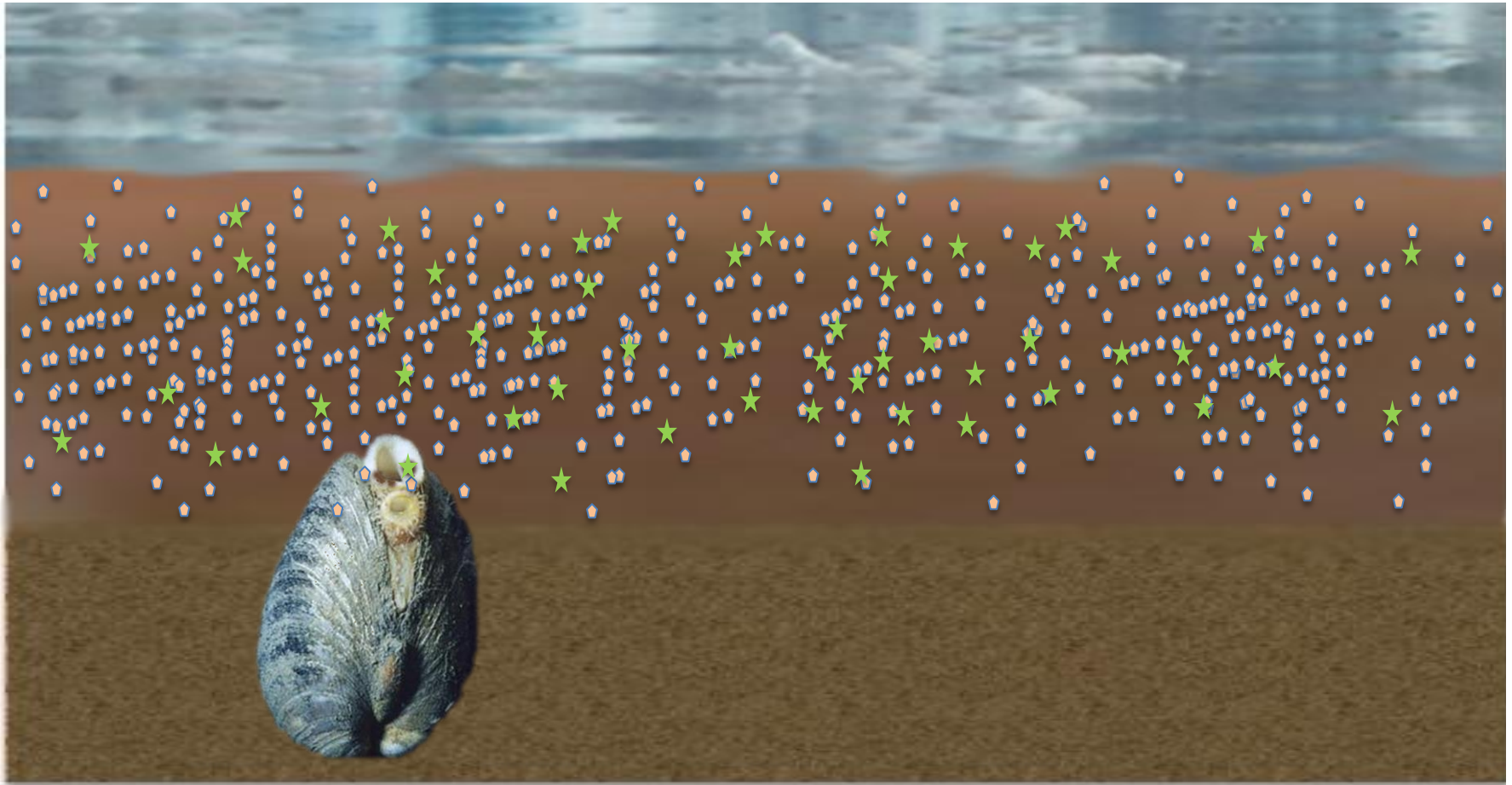


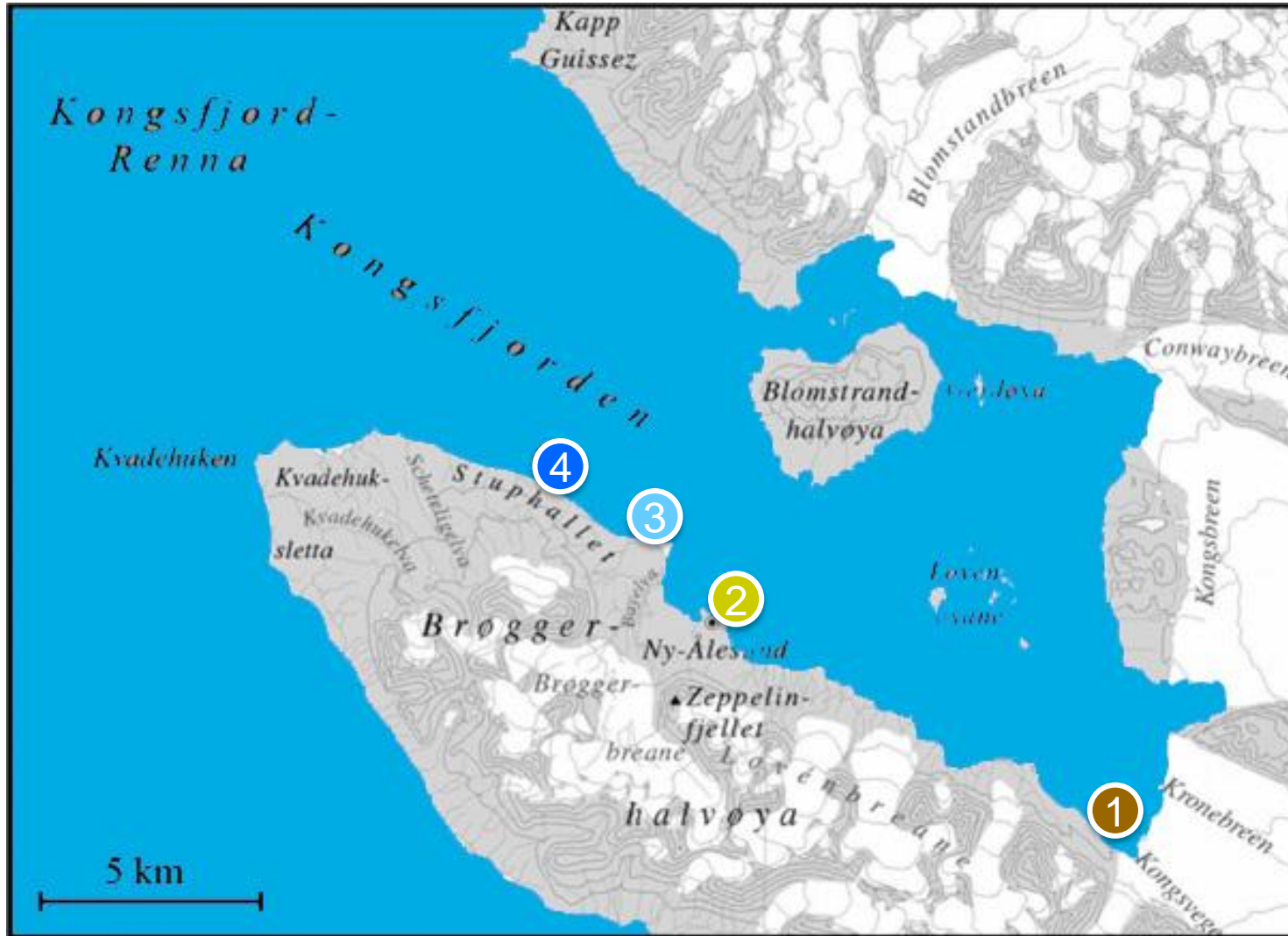
- Distribution: Shelves of Arctic Ocean, circumboreal south New England and Japan
- 90 mm length
- Longevity: > 30 yrs
- Filter feeder
- Food for walrus, fish, seastar

Greenland smooth cockle *Serripes groenlandicus*

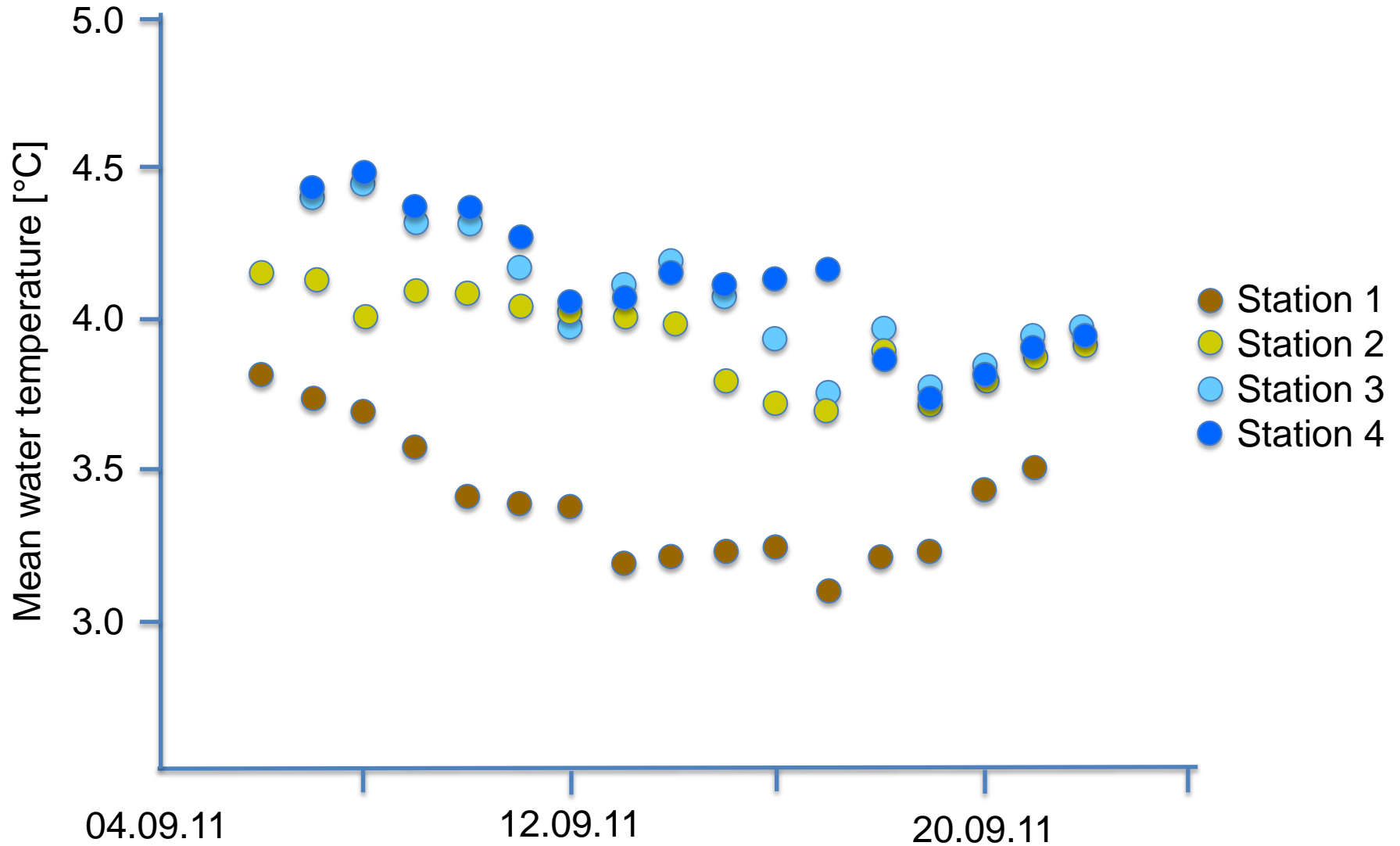


Greenland smooth cockle *Serripes groenlandicus*



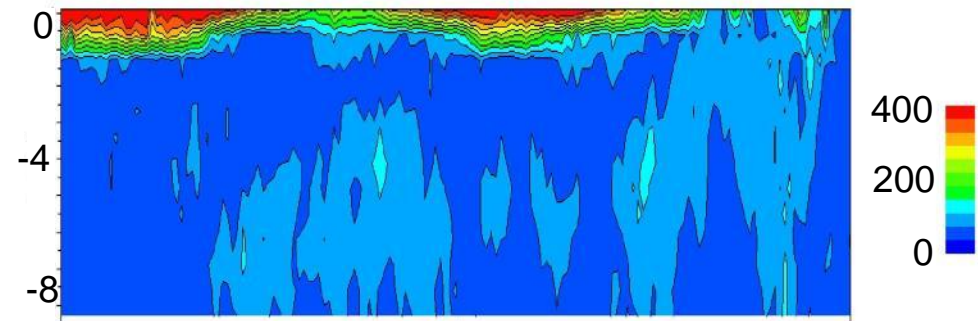


Daily running mean of water temperature (10 m depth)

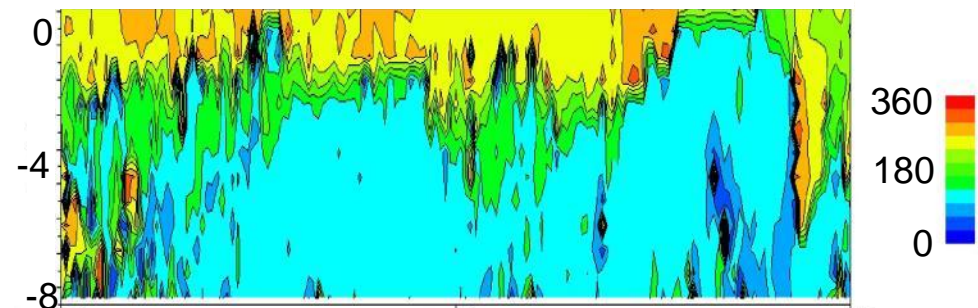


Station 1

Velocity magnitude [mm/s]



Velocity direction [°]



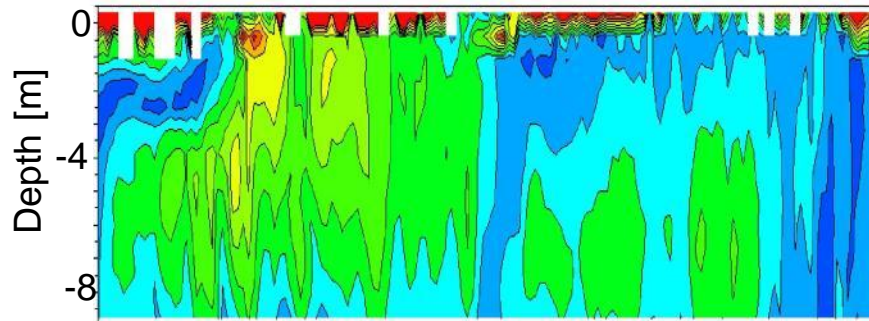
18. Sep.
09.00 h

18. Sep.
22.00 h

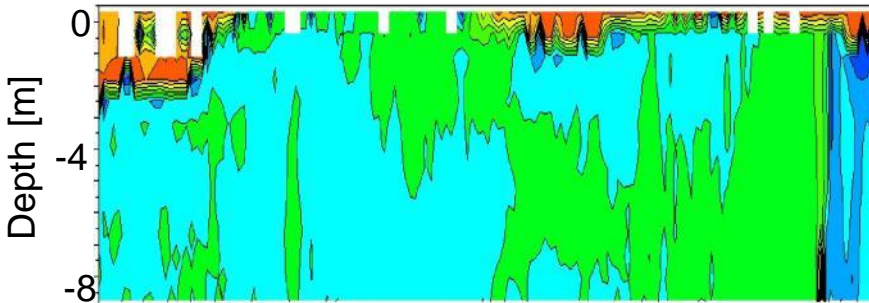
19. Sep.
11.00 h

Station 4

Velocity magnitude [mm/s]



Velocity direction [°]



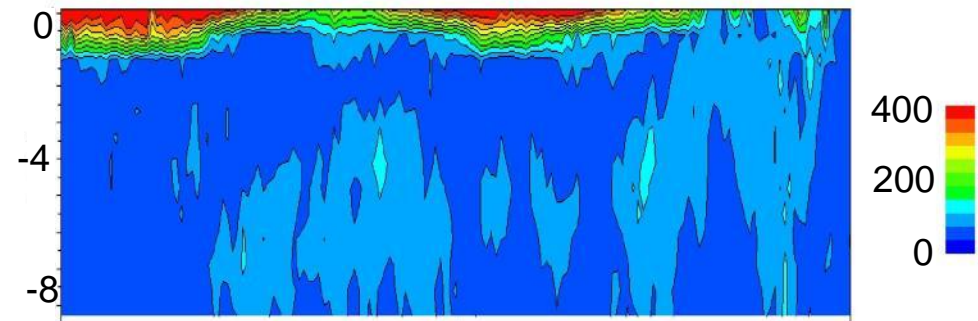
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18. Sep.
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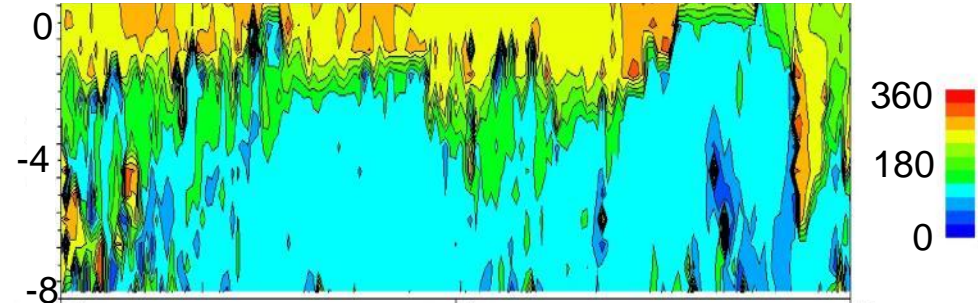
19. Sep.
11.00 h

Station 1

Velocity magnitude [mm/s]



Velocity direction [°]



18. Sep.
09.00 h

18. Sep.
22.00 h

19. Sep.
11.00 h

- *Serripes groenlandicus* established biological proxy
- Shell usable as climate archive
- Growth variability is directly driven by environment
- Cockles' shell allows validated conclusions on physical parameters
- More research on biological interactions of faunal communities needed under scenario of warming Arctic ocean

Thank you for your kind attention!