UPPSALA UNIVERSITET

Baltic Earth
Earth System Science for the Baltic Sea Region

BEAR: Natural hazards and extreme events

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1. Introduction

2. Extreme conditions (current knowledge, now and potential future change)

1. Synoptic scale events

1. Winds storms (**Martin Stendel**)
2. Extreme waves (**Erik Nilsson**)
3. Sea level (**Jani Särkkä**)
4. Ice ridging (**Jari Haapala**)
5. Precip (**Erik Kjellström**)
6. Snow Canons (**Kirsti Jylhä**)
7. River floods (**Sergei Zhuravlev, Irina Danilovich**)

2. Monthly scale events

1. Heat waves – atmosphere and marine (NN)
2. Algea blooms (**Norbert Wasmund**)
3. Ice seasons (**Jari Haapala**)
4. Drying (**Sergei Zhuravlev, Irina Danilovich**)

2.2 Changes in forcing (**Martin Stendel**)

Arctic ice, persistence, blocking impacts…

1. Possible implications for society

1. Forest fires (**Ilari.Lehtonen**)
2. Coastal flooding (**Martin Drews**)
3. Dams and infrastructures (NN)
4. Off-shore activities (NN)
5. Shipping (**Pentti Kujala**)

3. Knowledge gaps

4. Conclusions and key messages

5. References

Present status

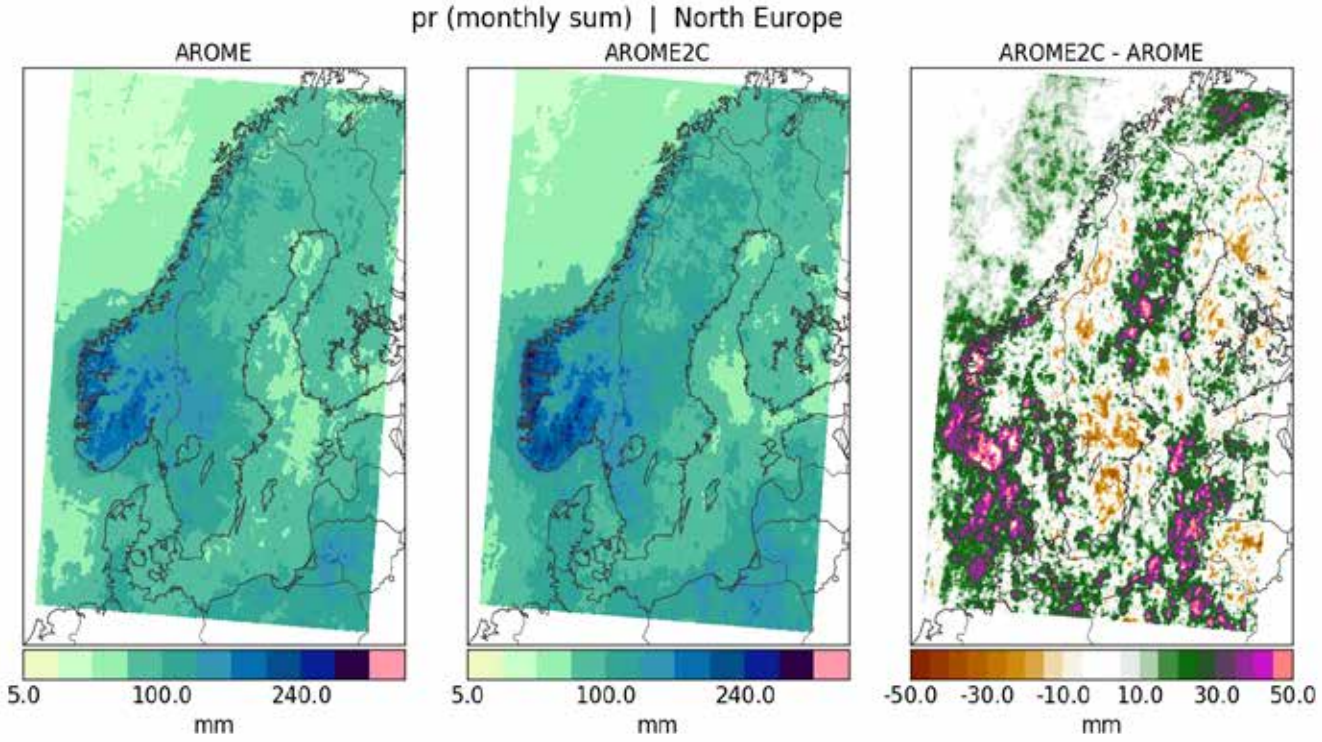
- Most co-authors identified
- Draft text for most sections

Challenges

- Streamline sections
- To some extent limit text
- Agree on key messages

Examples of results: precipitation

Fig. 2.1.1.2 _2: Ice-free statistics (Type F in Tuomi et al. (2011)) for the 99.9th percentile significant wave height using a high-resolutin wave hindcast for the
:013 (Nilsson et al.



Examples of results: significant wave height

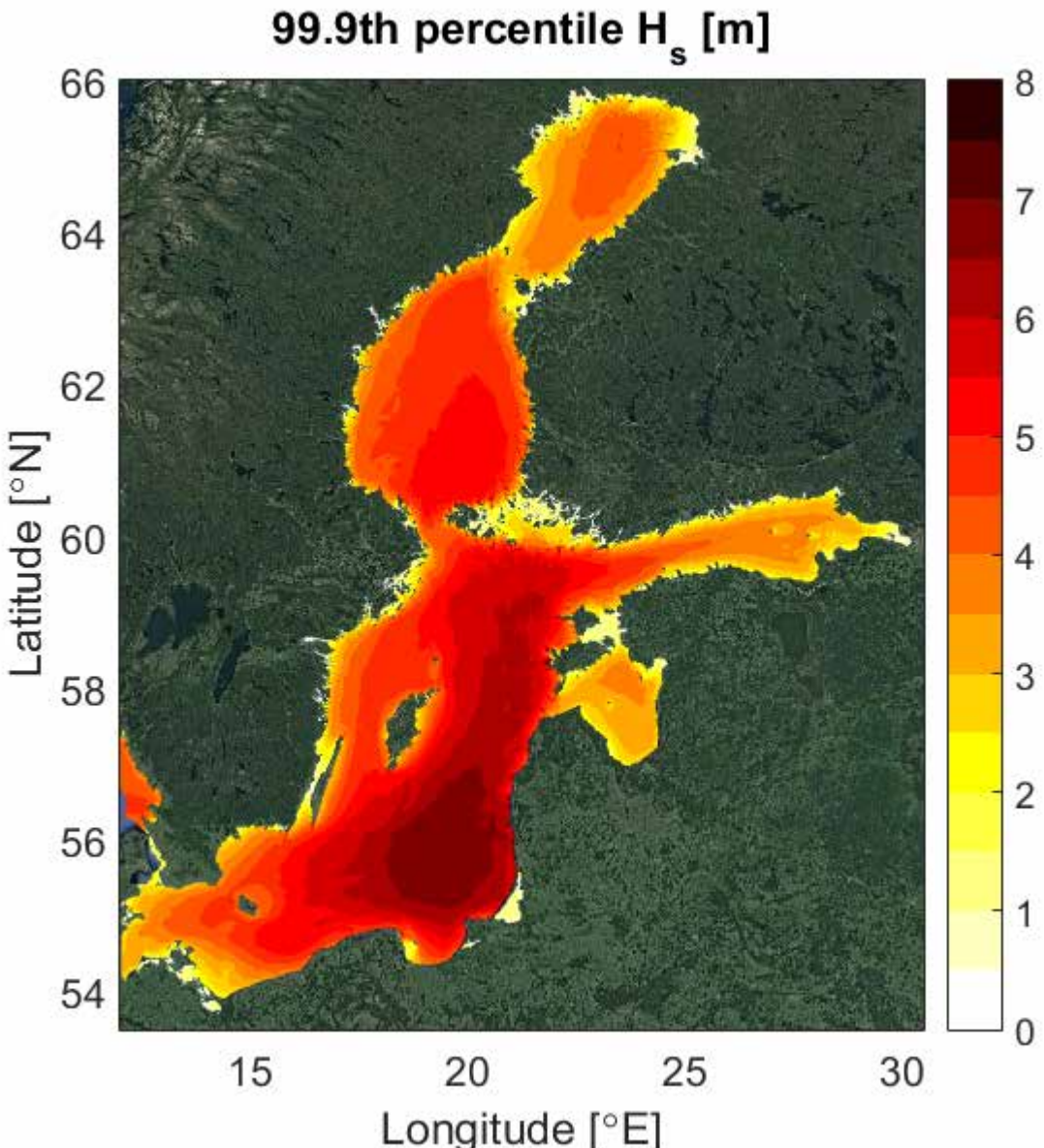


Fig. 2.1.1.2 _2: Ice-free statistics (Type F in Tuomi et al. (2011)) for the 99.9th percentile significant wave height using a high-resolutin wave hindcast for the years 1998-2013 (Nilsson et al. 2019).

Examples of results: algae blooms

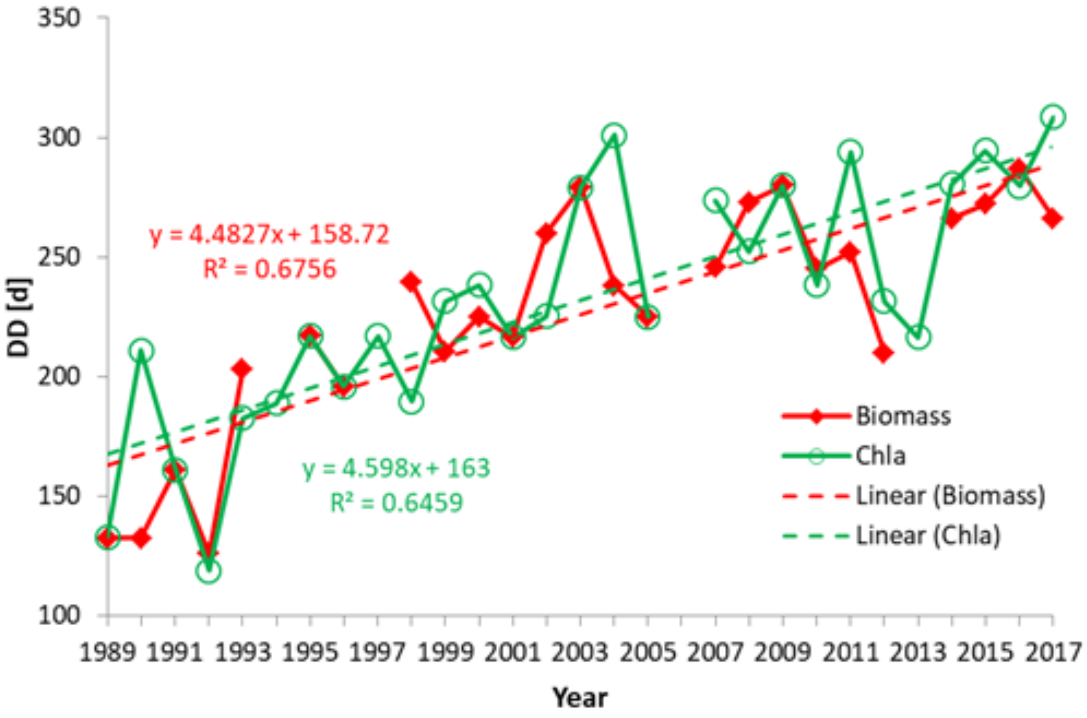


Fig. 2.1.2.2_2: Trends in the duration of the vegetation period (DD), based on phytoplankton biomass and chl *a* data, with regression lines and corresponding formulas (Wasmund subm.).