

Sea Extremes: Integrated impact assessment in coastal climate adaptation

Sørensen, Carlo Sass; Knudsen, Per; Broge, Niels; Molgaard, Mads ; Andersen, Ole Baltazar

Published in:
Geophysical Research Abstracts

Publication date:
2016

Document Version
Publisher's PDF, also known as Version of record

[Link back to DTU Orbit](#)

Citation (APA):
Sørensen, C. S., Knudsen, P., Broge, N., Molgaard, M., & Andersen, O. B. (2016). Sea Extremes: Integrated impact assessment in coastal climate adaptation. Geophysical Research Abstracts, 18, [EGU2016-10275].

DTU Library

Technical Information Center of Denmark

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.



Sea Extremes: Integrated impact assessment in coastal climate adaptation

Carlo Sorensen (1), Per Knudsen (1), Niels Broge (2), Mads Molgaard (3), and Ole Andersen (1)

(1) DTU Space, Lyngby, Denmark (carlos@space.dtu.dk), (2) Danish Geodata Agency, Copenhagen, Denmark, (3) Geo, Lyngby, Denmark

We investigate effects of sea level rise and a change in precipitation pattern on coastal flooding hazards. Historic and present in situ and satellite data of water and groundwater levels, precipitation, vertical ground motion, geology, and geotechnical soil properties are combined with flood protection measures, topography, and infrastructure to provide a more complete picture of the water-related impact from climate change at an exposed coastal location. Results show that future sea extremes evaluated from extreme value statistics may, indeed, have a large impact. The integrated effects from future storm surges and other geo- and hydro-parameters need to be considered in order to provide for the best protection and mitigation efforts, however. Based on the results we present and discuss a simple conceptual model setup that can e.g. be used for ‘translation’ of regional sea level rise evidence and projections to concrete impact measures. This may be used by potentially affected stakeholders –often working in different sectors and across levels of governance, in a common appraisal of the challenges faced ahead. The model may also enter dynamic tools to evaluate local impact as sea level research advances and projections for the future are updated.