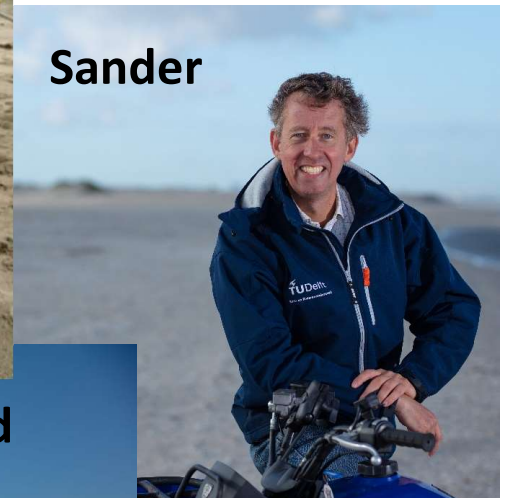
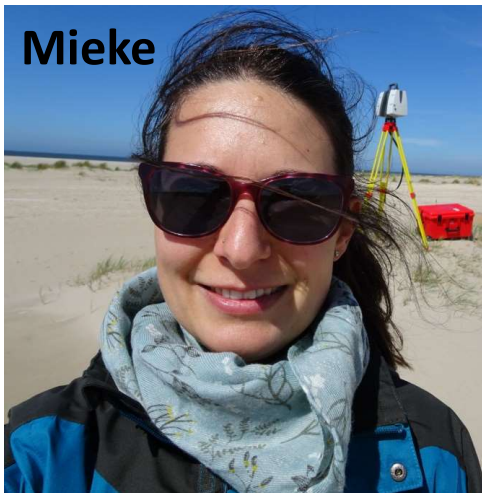


Coast scan

Coastal variability and resilience assessment by permanent laser Scanning and modeling



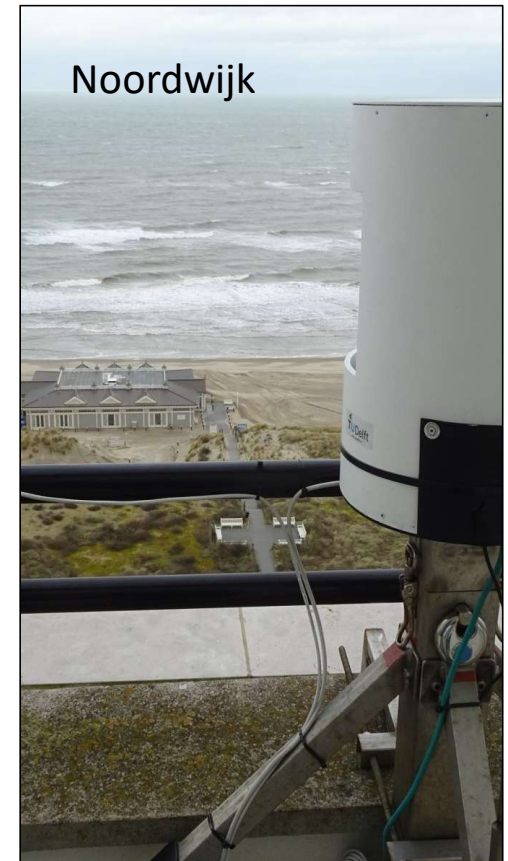
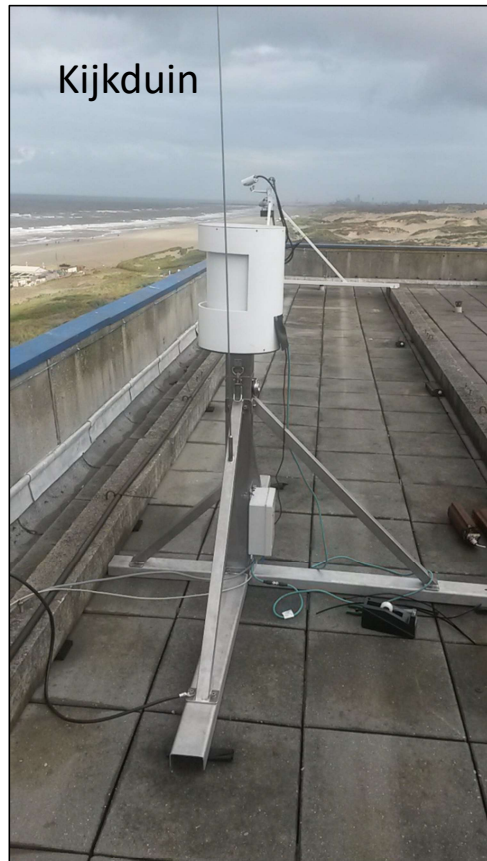
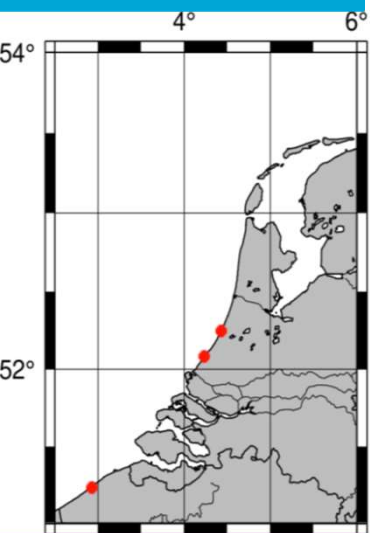
Team

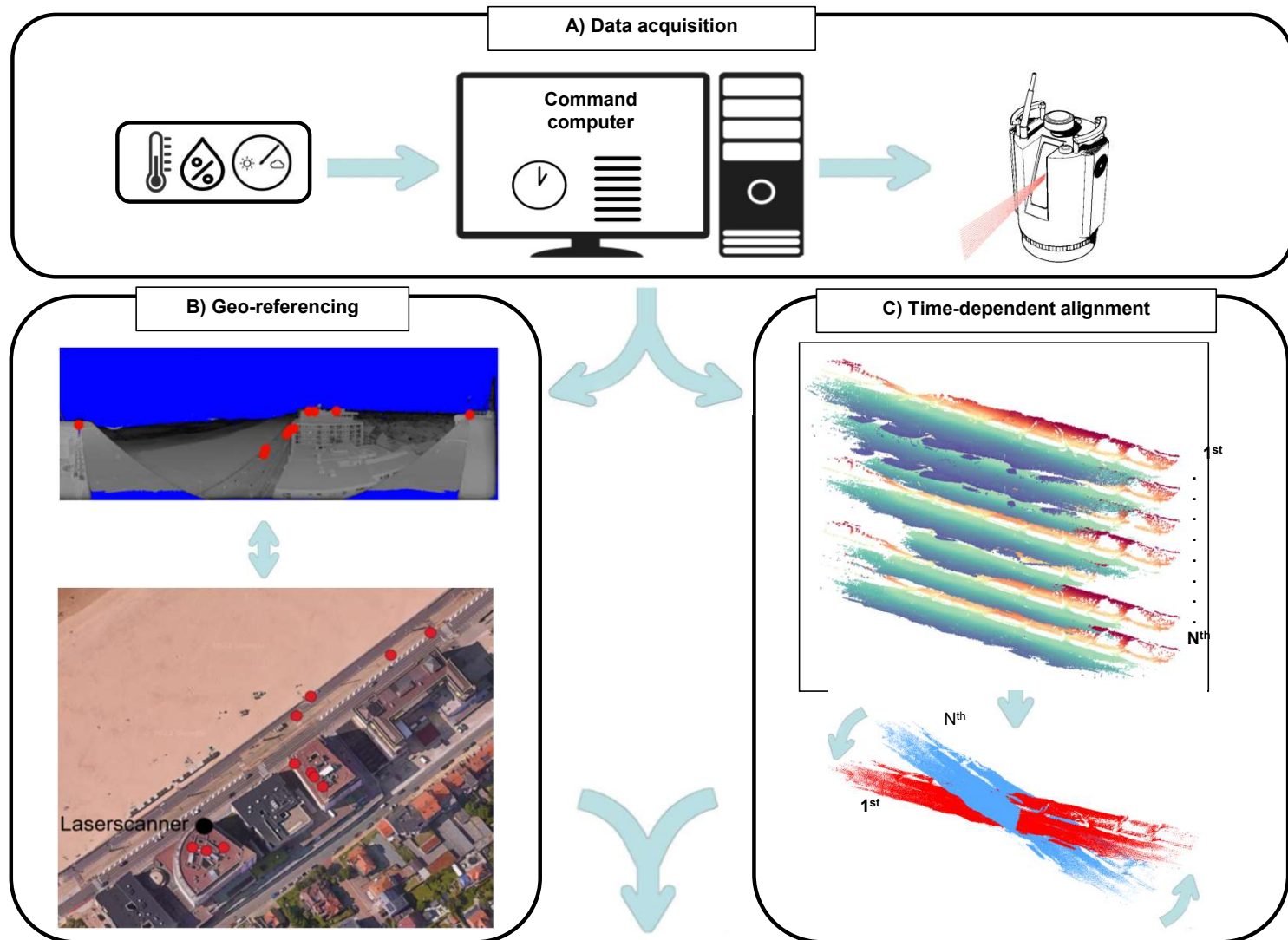


Statistics

- Period: 2017-2023
- Coastscan Partners/Contributors/Collaborators:
 - 6 Universities
 - 5 Institutes
 - 3 Companies
 - Data shared with about 10 Phd's en 2 PostDoc
 - About 20 BsC and MsC students
- Output
 - 2 national newspaper articles and 2 magazine articles
 - 2 national television documentary (Paul)
 - Articles
 - >40 contributions to (conference)articles (6 in preparation)
 - >150 references

Measuring locations





Vos et al.,
 2022
doi.org/10.1038/s41597-022-01291-9



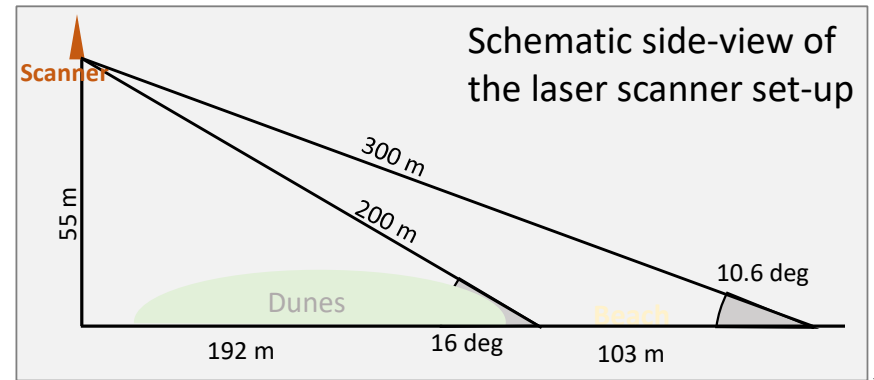
Data Collection of Permanent Laser Scanning

continuous data collection with Riegl VZ-2000:

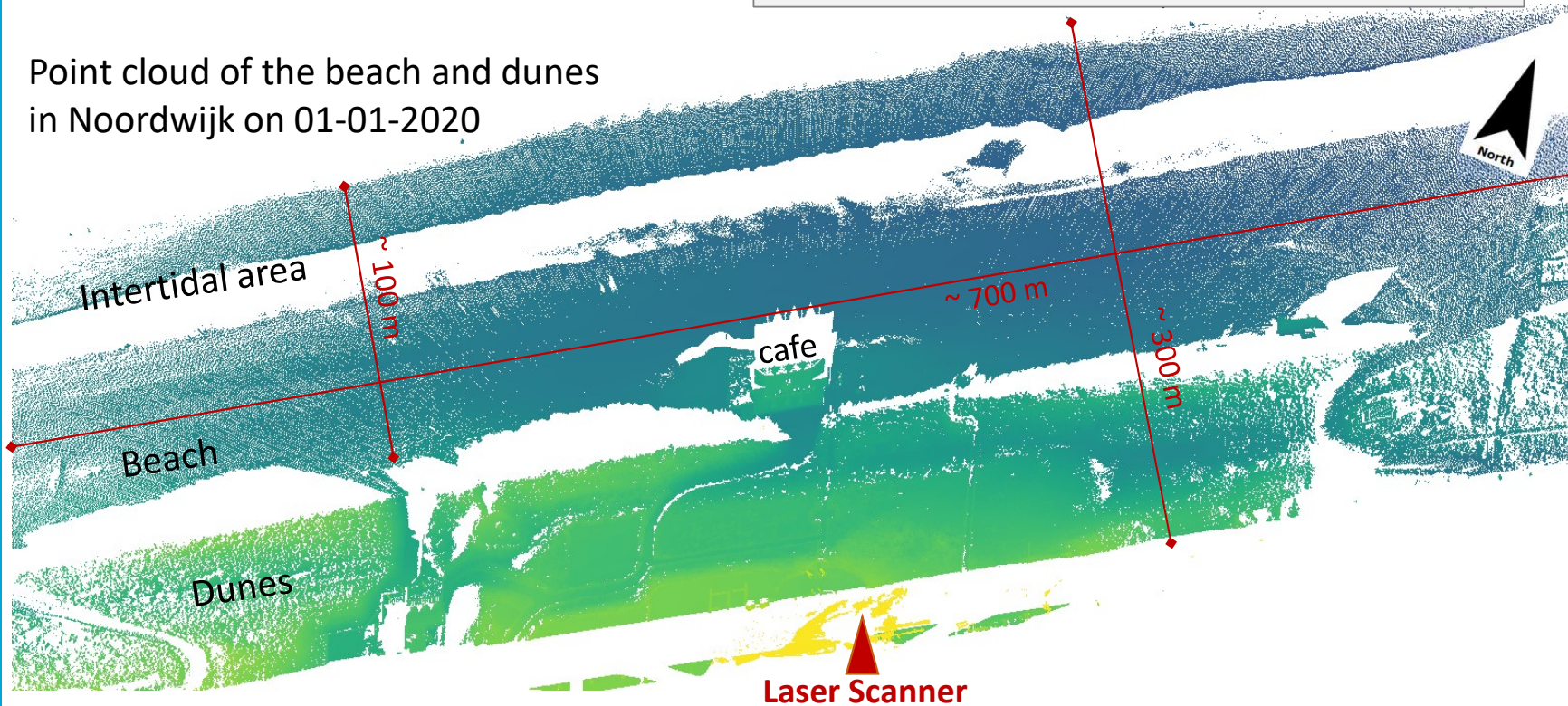
- 1 scan per hour, 24 hours per day (0.03 deg spacing)
- 1 scan per day (0.015 deg spacing)
- 3-8 Mio points per point cloud, covering ~1 km of coast

location	duration	year	Scans	Data
Kijkduin	6 months	2017	4000	400 GB
MariaKerke Bad (Belgium)	1 year	2017/2018	8000	1.5 TB
Noordwijk	3 years	2019 - 2022	23000	3 TB

Overview set-up Noordwijk

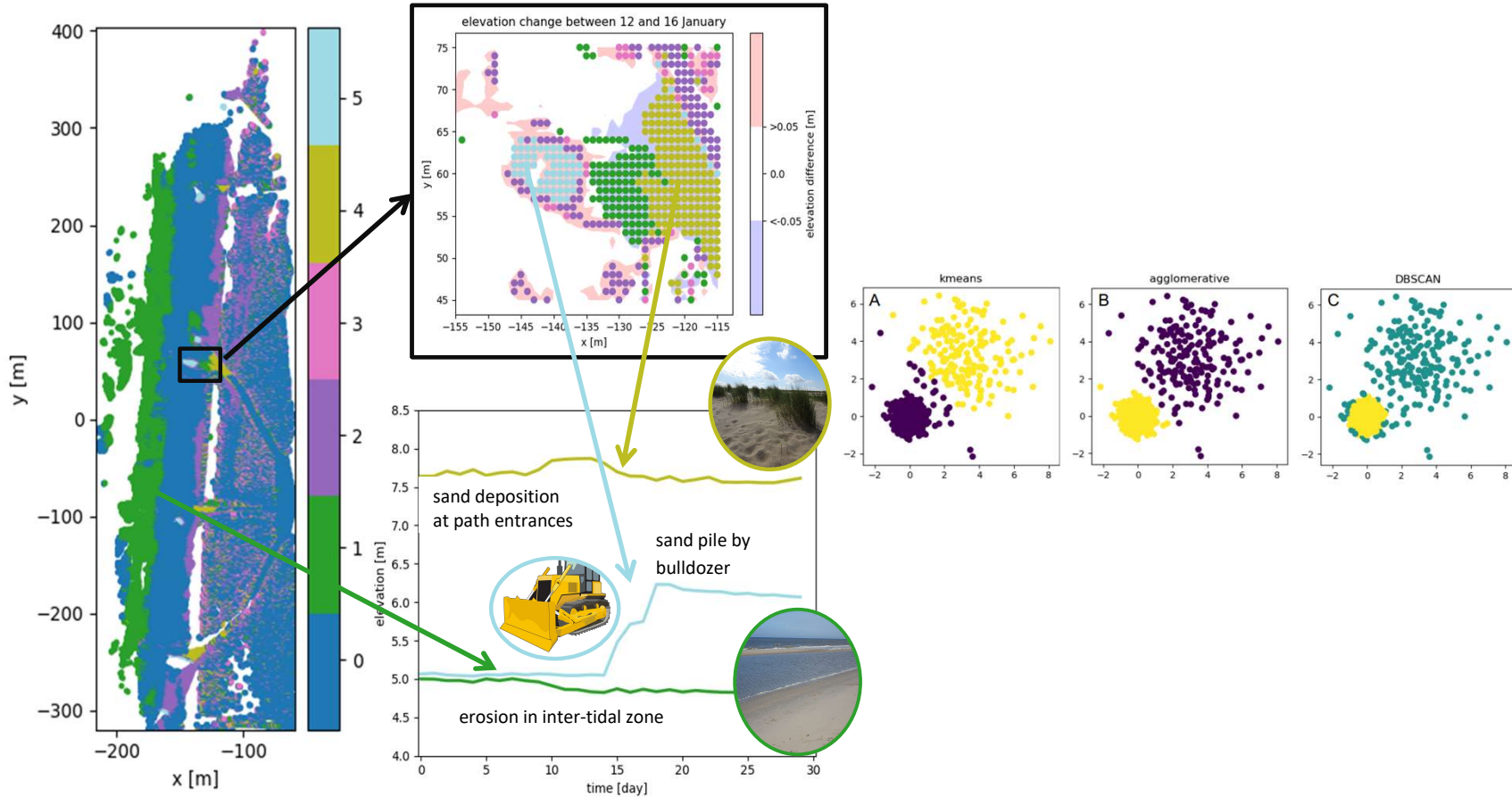


Point cloud of the beach and dunes
in Noordwijk on 01-01-2020

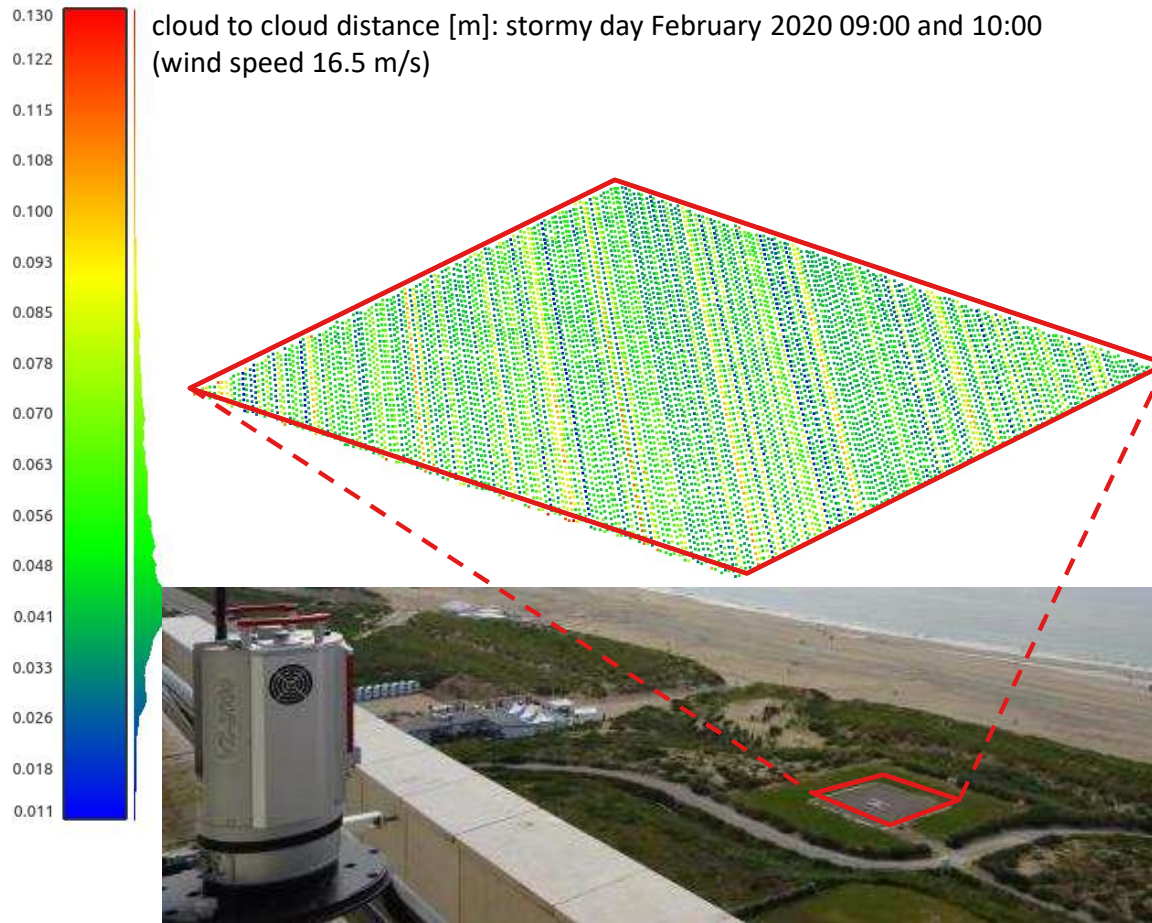


Clustering (comparison)

Kuschnerus et al., 2021
doi.org/10.5194/esurf-9-89-2021.



Effect of Storms on PLS Stability



Kuschnerus et al,
2021
[doi.org/10.5194/
isprs-archives-
XLIII-B2-2021-
745-2021.](https://doi.org/10.5194/isprs-archives-XLIII-B2-2021-745-2021)

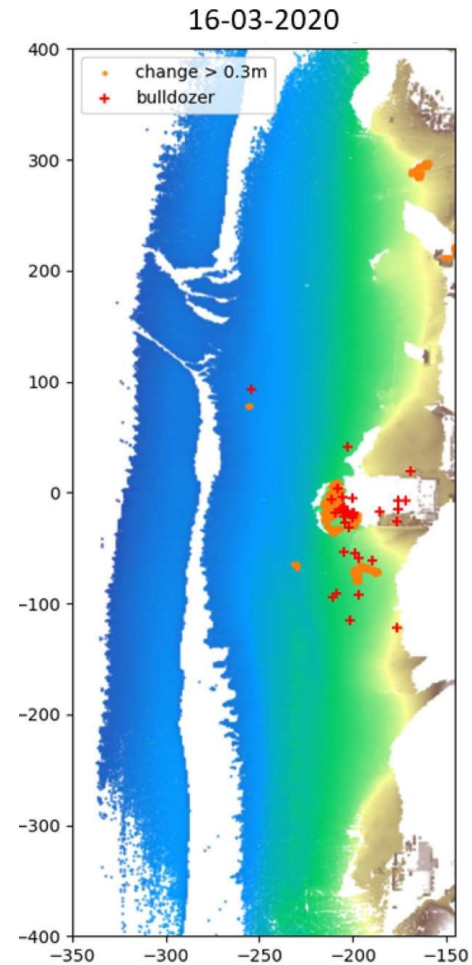


Effect of Bulldozers (dr. Ines Barbero-Garcia)

Barbero-García
et al., 2023
[doi.org/10.1016/
j.jag.2023.10318](https://doi.org/10.1016/j.jag.2023.10318)
5

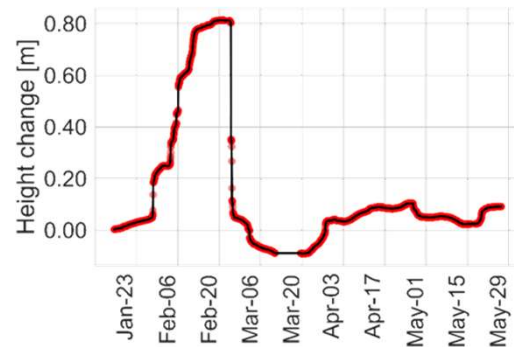


 TU Delft

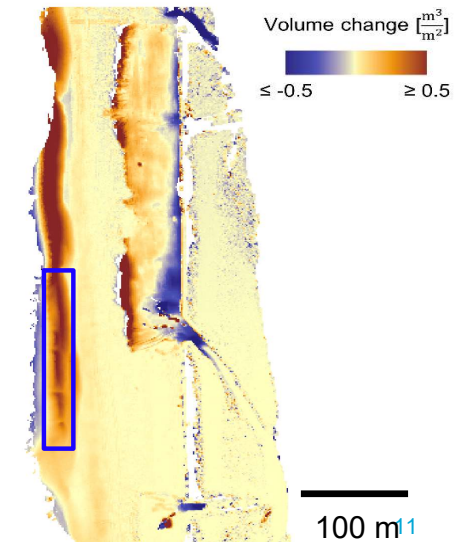
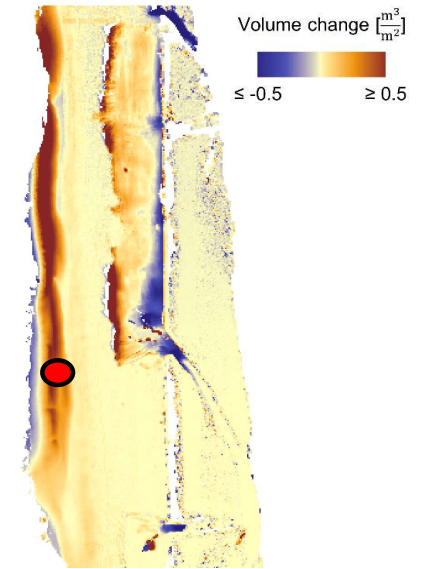
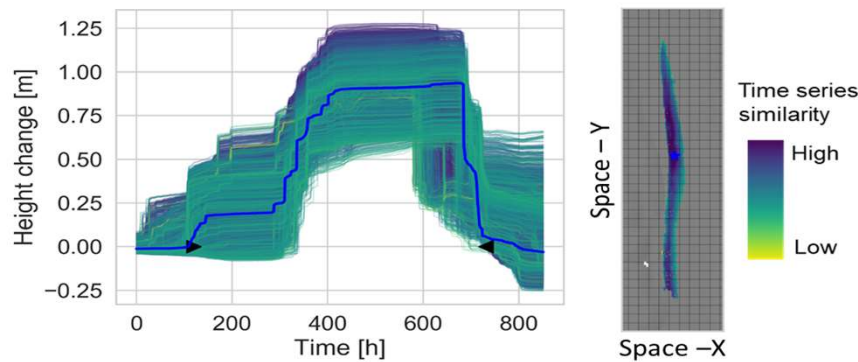


4D Objects-by-change

→ Object delineation as areas of similar surface change histories



→ Similar time lines are grouped together

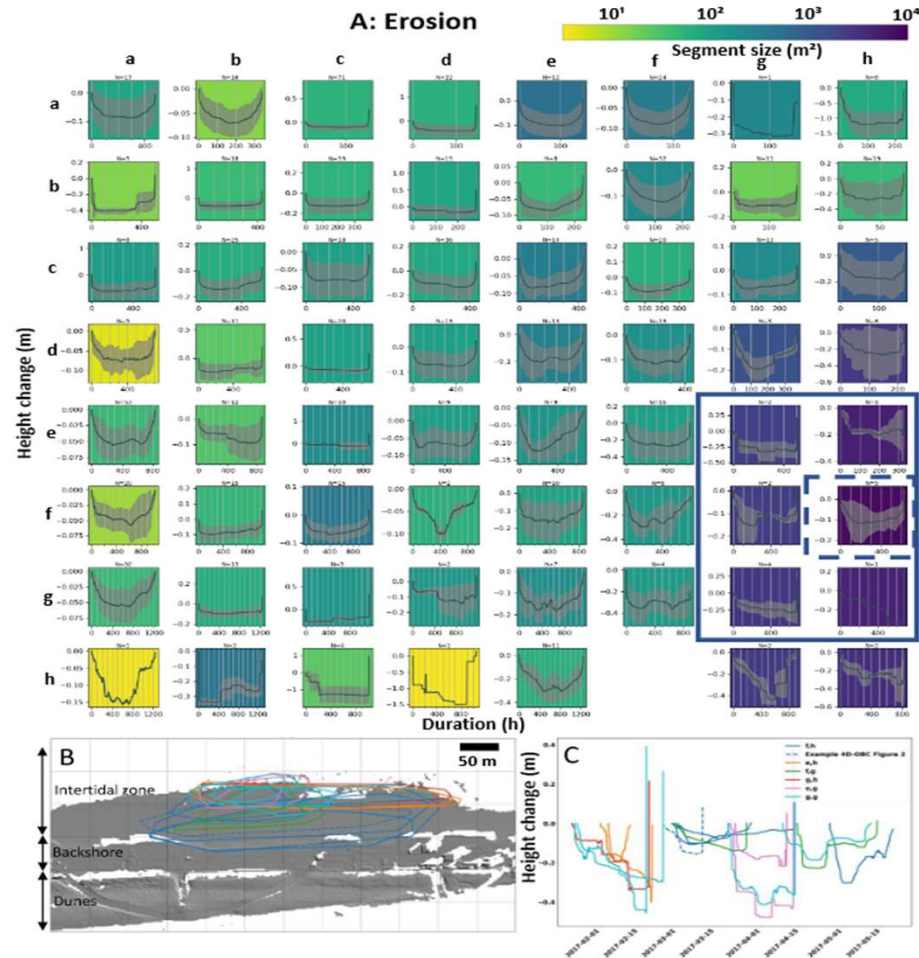


Anders et al.,
(2021),
doi.org/10.1016/j.isprsjprs.2021.01.015

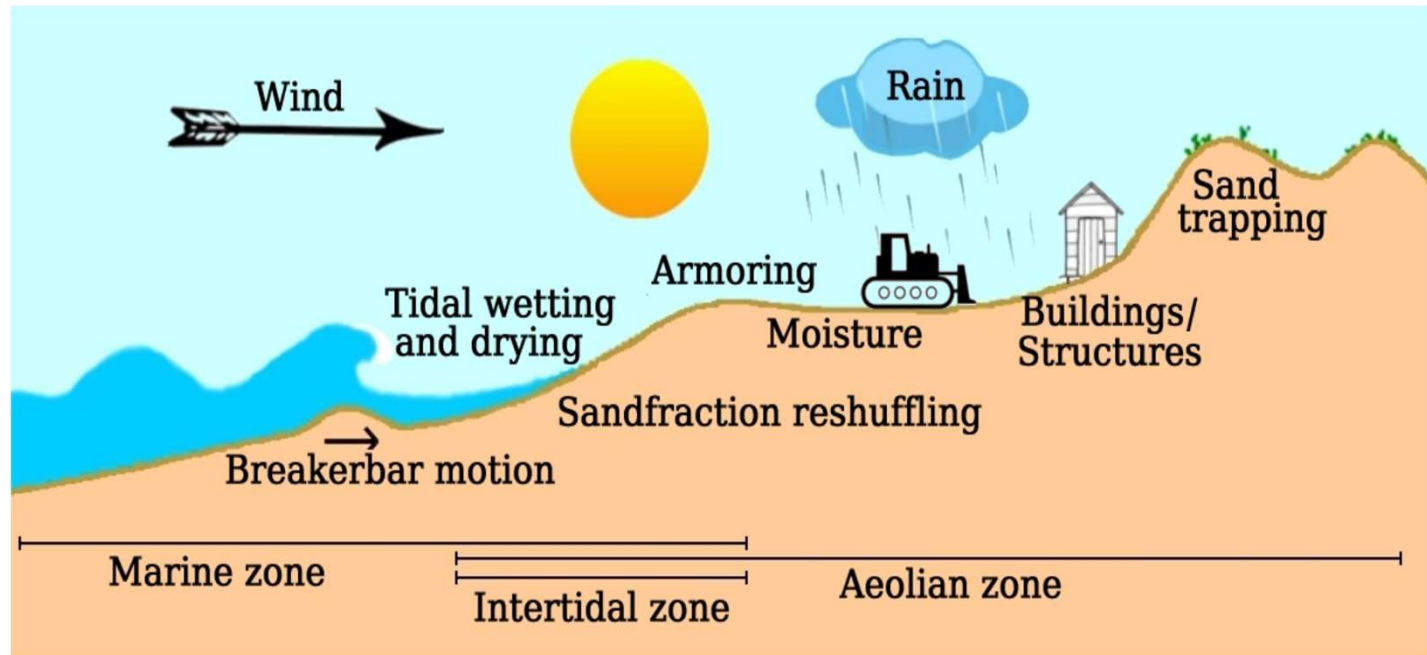


Grouping of 4D-OBC using SOM (D. Hulskemper)

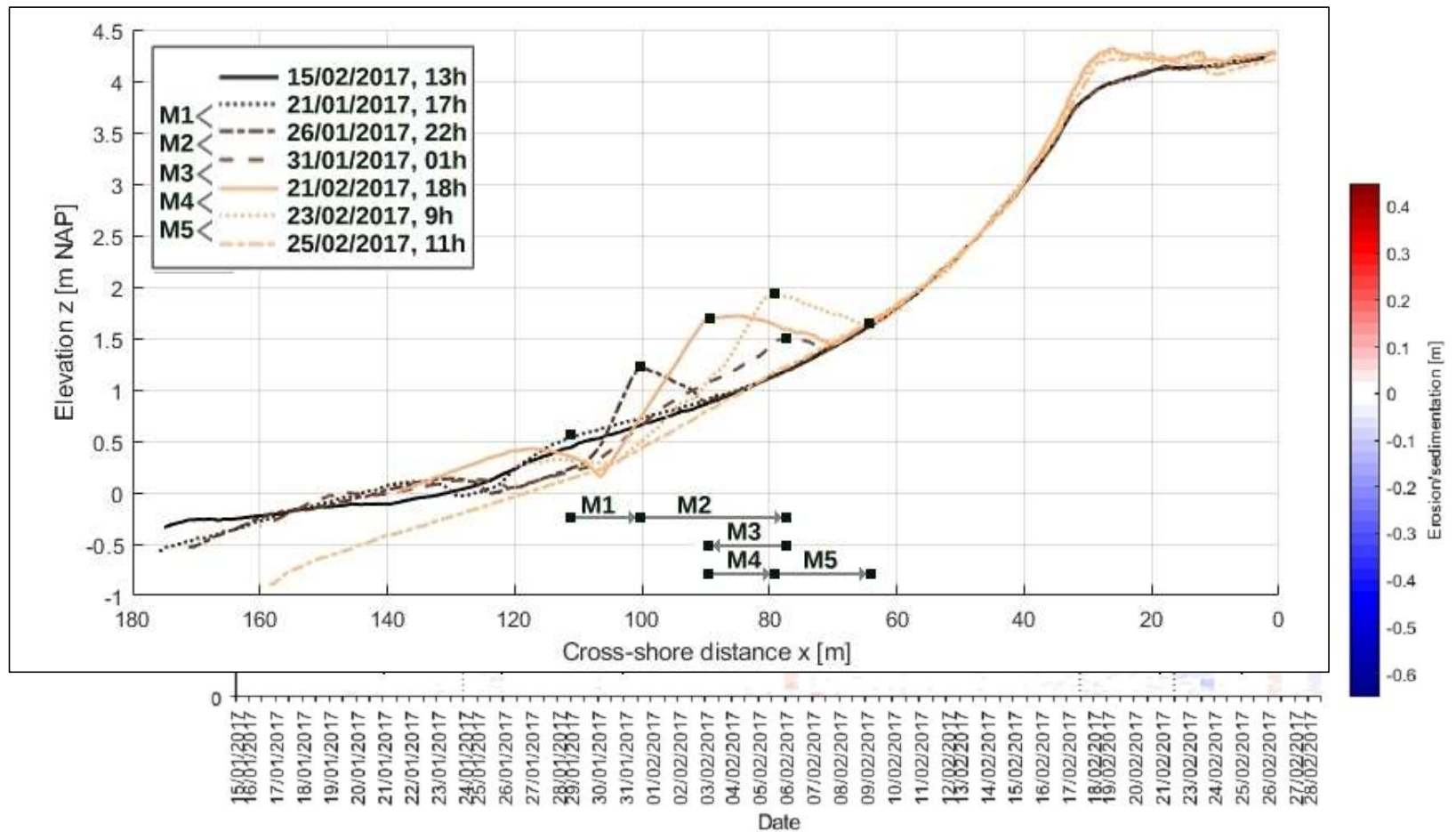
Hulskemper et al., 2022
doi.org/10.5194/isprs-archives-XLVIII-2-W2-2022-53-2022



Shoreward sand transport



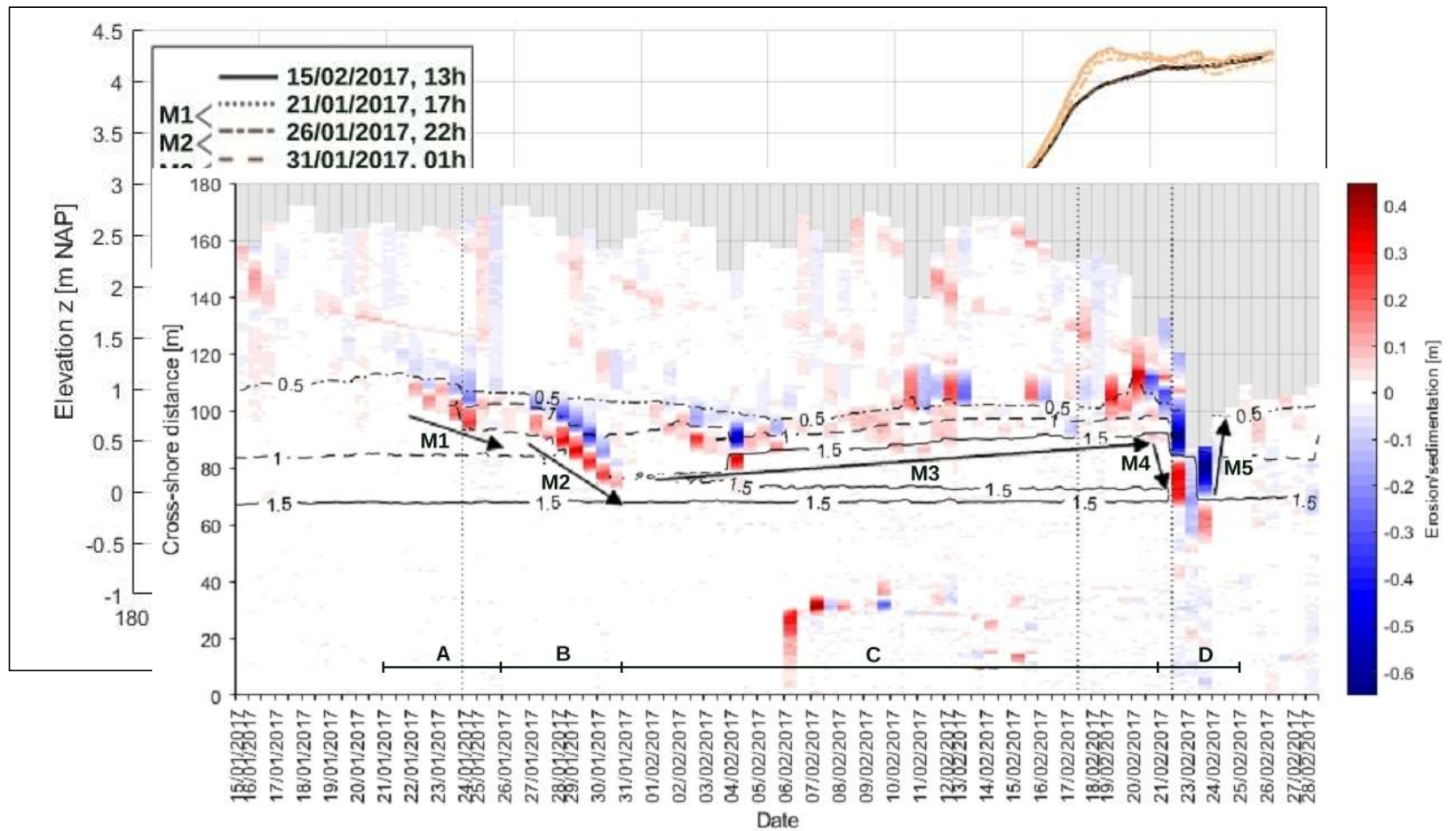
Intertidal area



Vos et al., 2020
doi.org/10.3390/jmse8110864



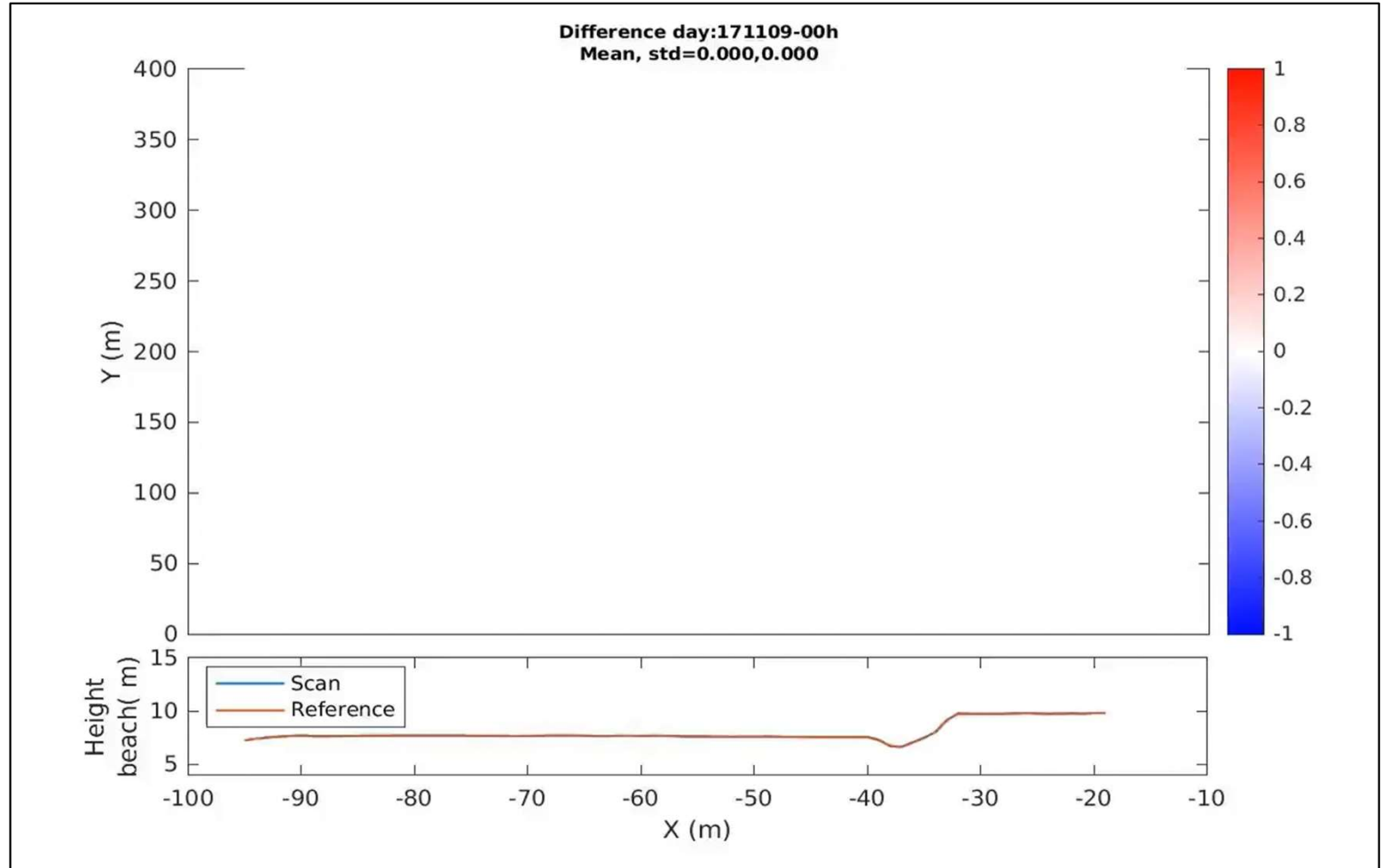
Intertidal area



Vos et al., 2020
doi.org/10.3390/jmse8110864



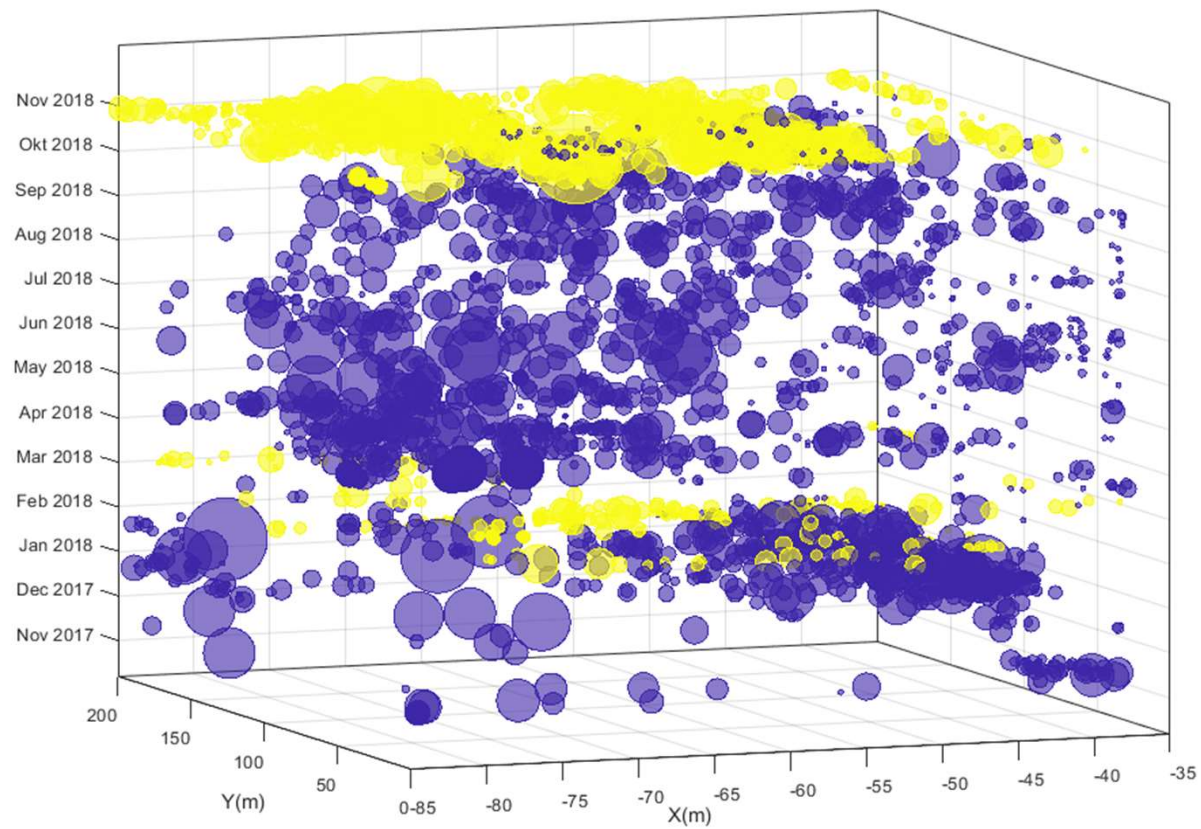
Aeolian sand transport



Vos et al., 2022
ICCE 2022, to
be published



Detection using 4D OBC



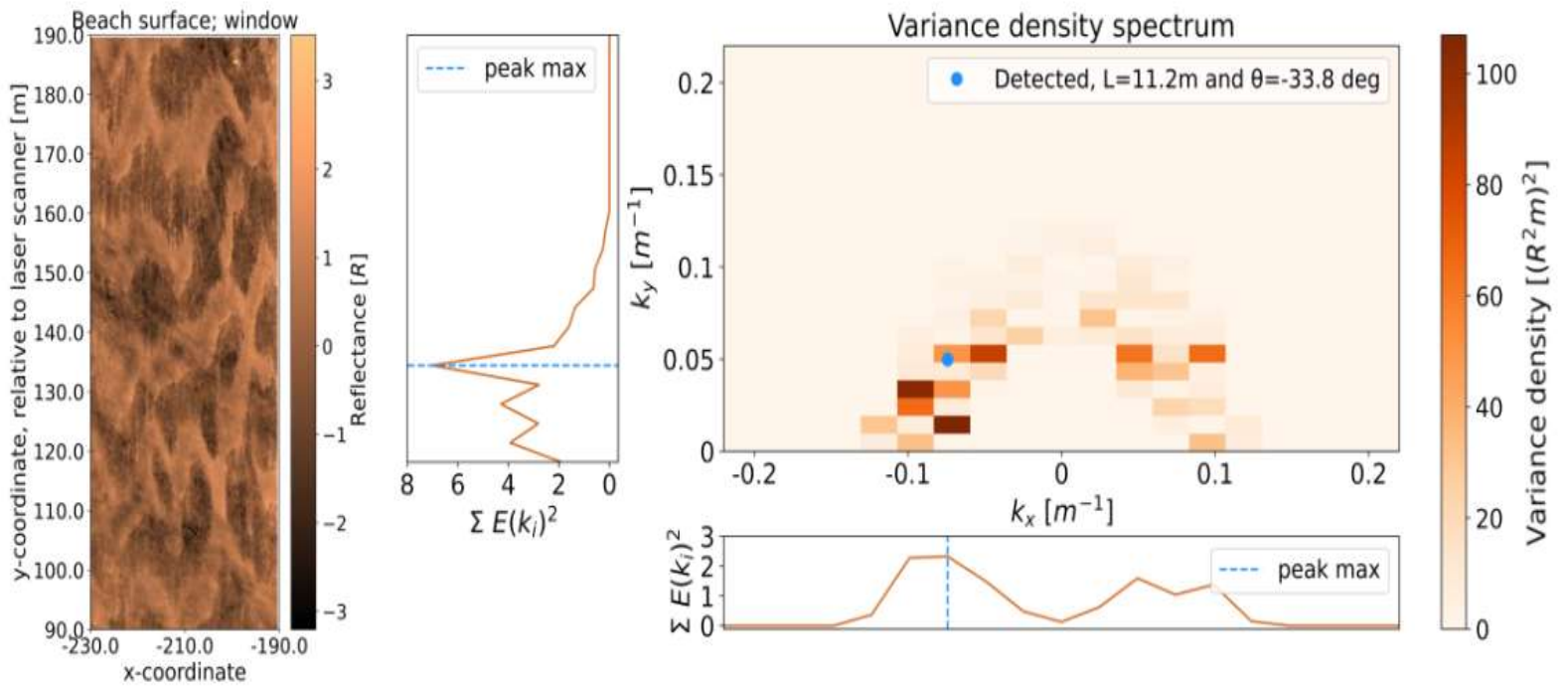
Vos et al., 2022
ICCE 2022, to
be published



Visualization sand bars (Ynke Schrijers)



Detection sand strips (Kay Boomaars)



IJzendoorn et al., 2023 to be published



Effect of Buildings



Vos et al., 2023
to be published

