Testing the FF-SAR methodology for the flood extent mapping in the wetlands area

3515UI NoR sponsorship summary

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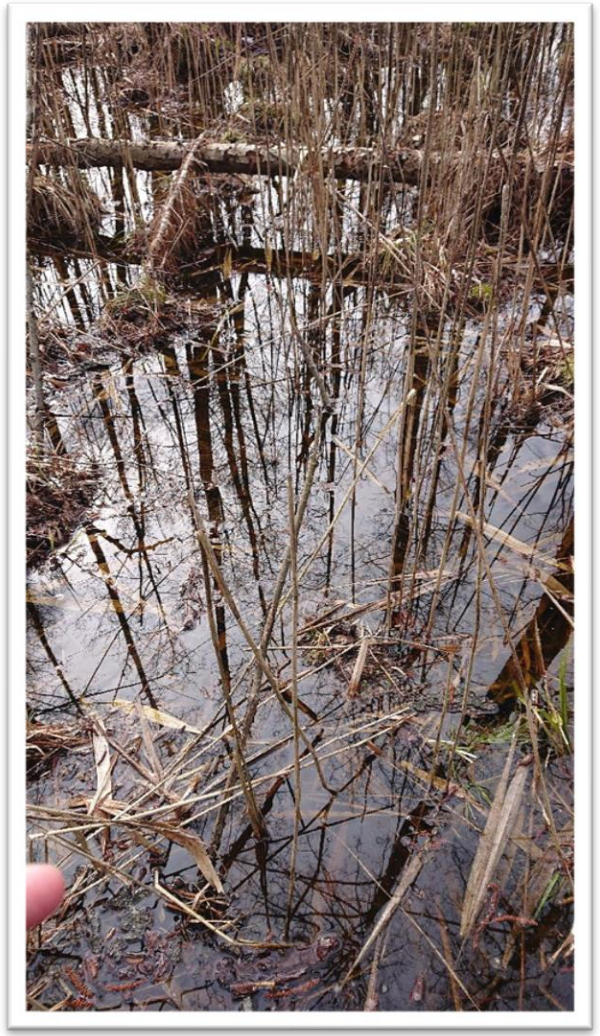
Objectives

- The objective of this project is to test the applicability of the fully focused synthetic aperture radar (FF-SAR) methodology from the CryoSat2 and Sentinel-3 data for the flood extent mapping in the wetlands area.

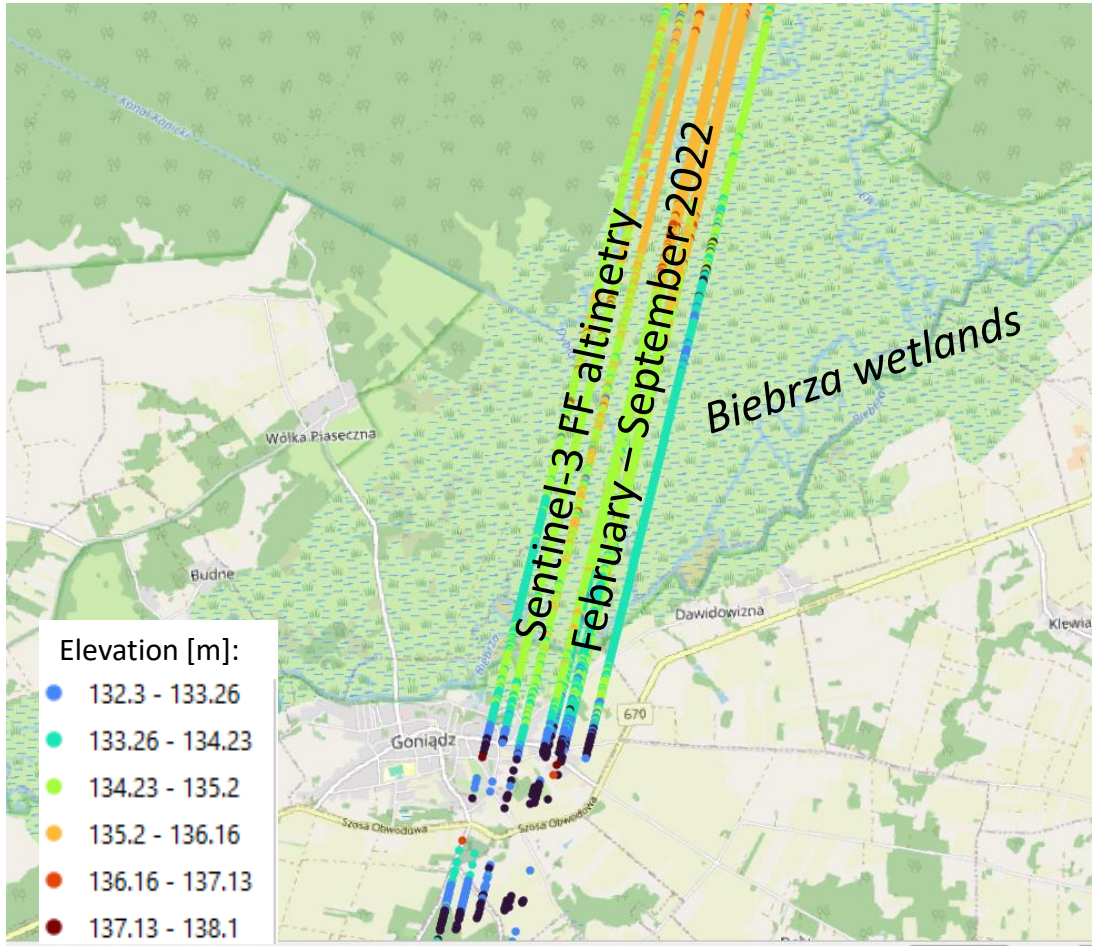
- Processing was done in the Earth Console P-PRO platform and the Fully Focused-SAR for CS-2 and S3(Aresys) processor

Biebrza wetlands case study (NE-Poland)



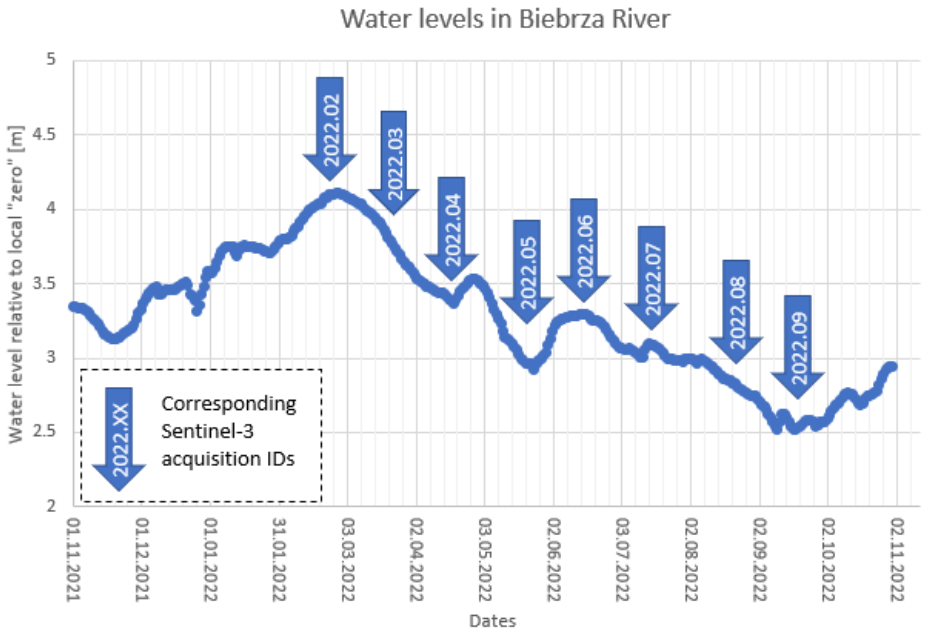
Data

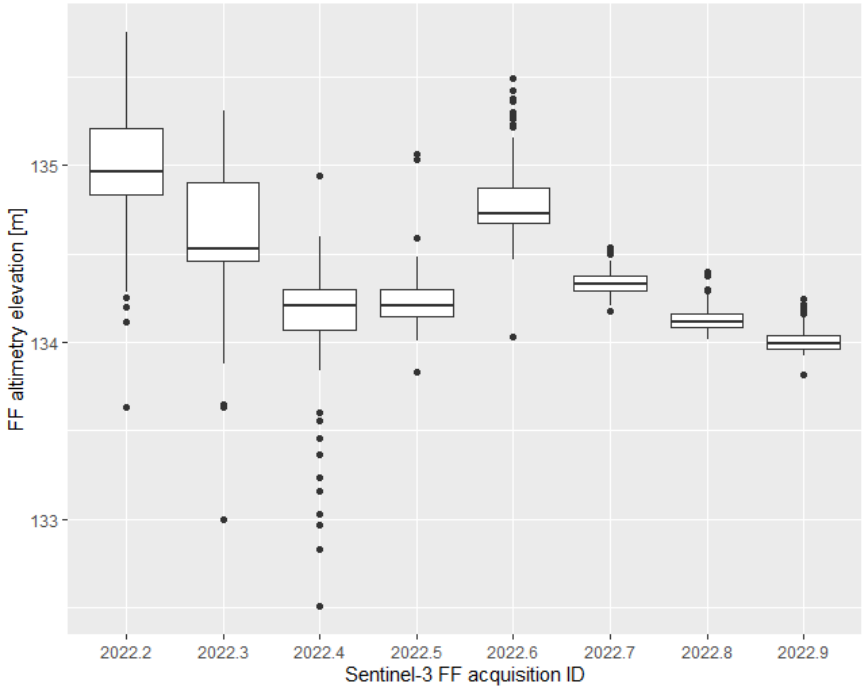
- No CryoSat-2 data in appropriate mode was available over the study area
- Sentinel-3 SRAL data was used in ~1month temporal resolution



Comparison of altimetry with wetland levels

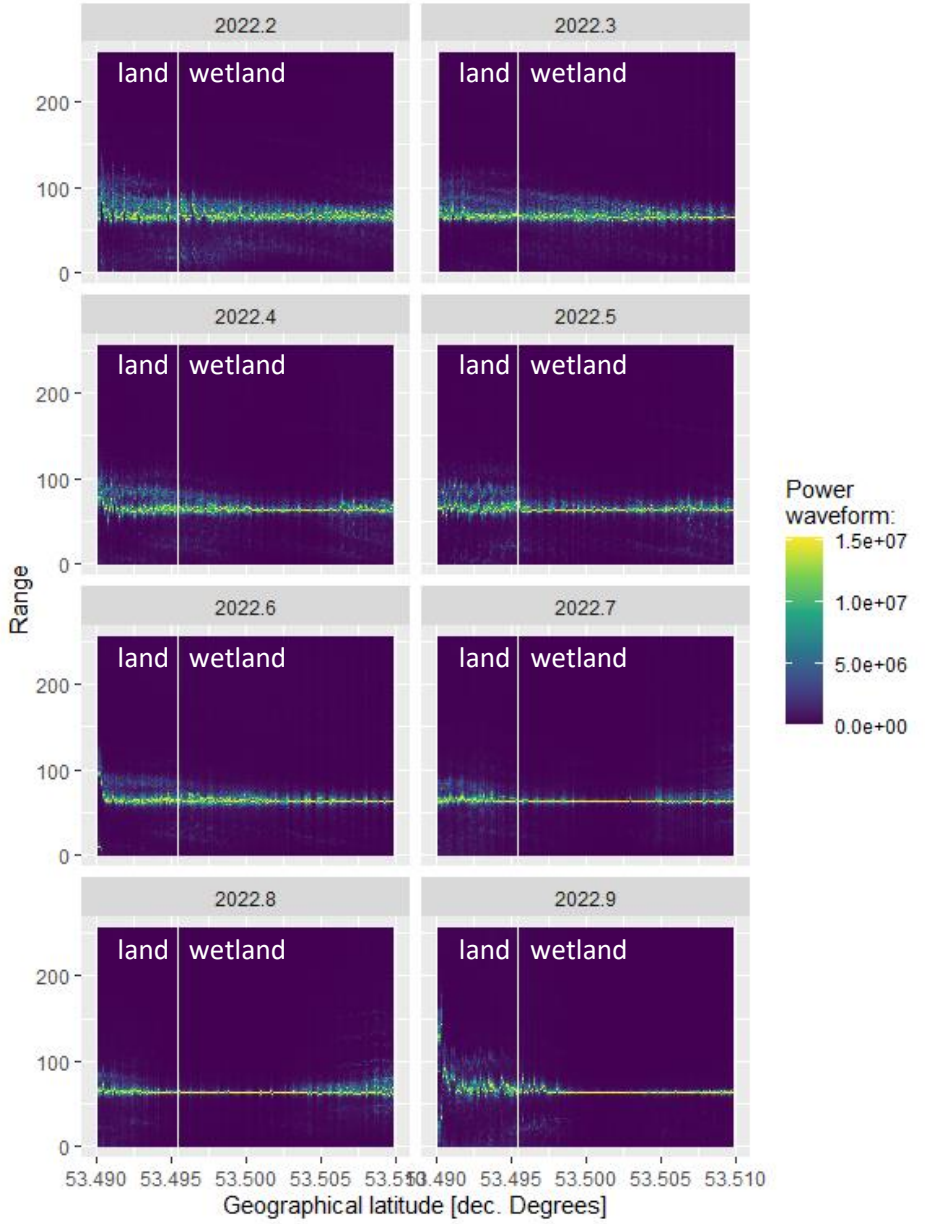
Median FF Sentinel-3 elevation in the wetlands cross-section corresponds very well to the wetland levels in the river





Radargram analysis

- Radargrams of the wetland cross-section are difficult to analyze
- Clearly, during high water levels (flood) there is high variability in the radargrams
- During low water levels (dry) radargrams in wetlands are rather flat
- Variability of land is similar to variability of wetlands in high water levels



Conclusions

- Water levels in the densley vegetated wetland was identified correctly, at leaset when the median value was analyzed
- Classification of water/land below vegetation needs further study, with aid of suited field measurements campaign

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