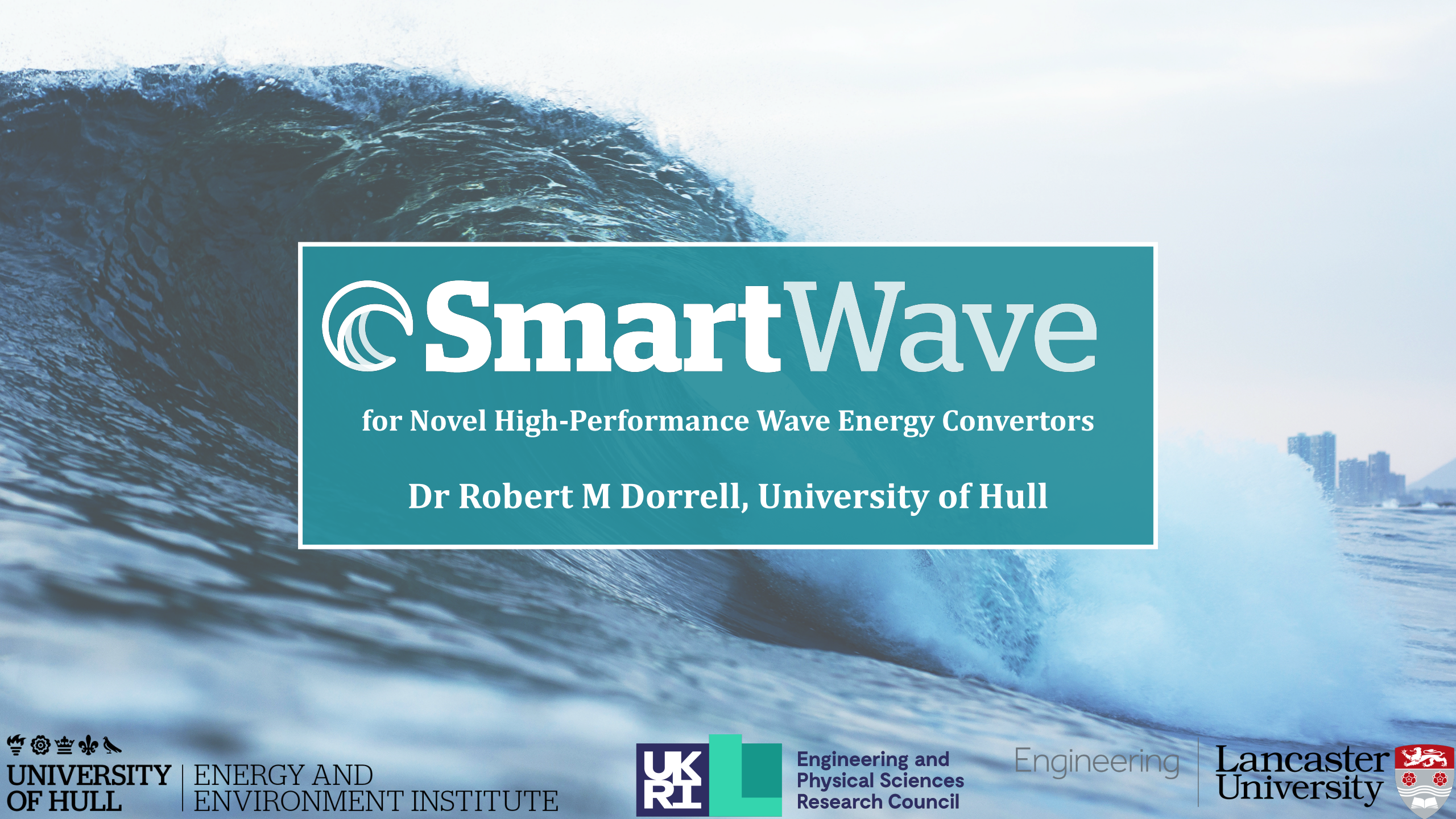

SmartWave

for Novel High-Performance Wave Energy Convertors

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UKRI Engineering and Physical Sciences Research Council

Engineering | Lancaster University

Local Sea state for Stop Go Operations

LoSSGO Aims:

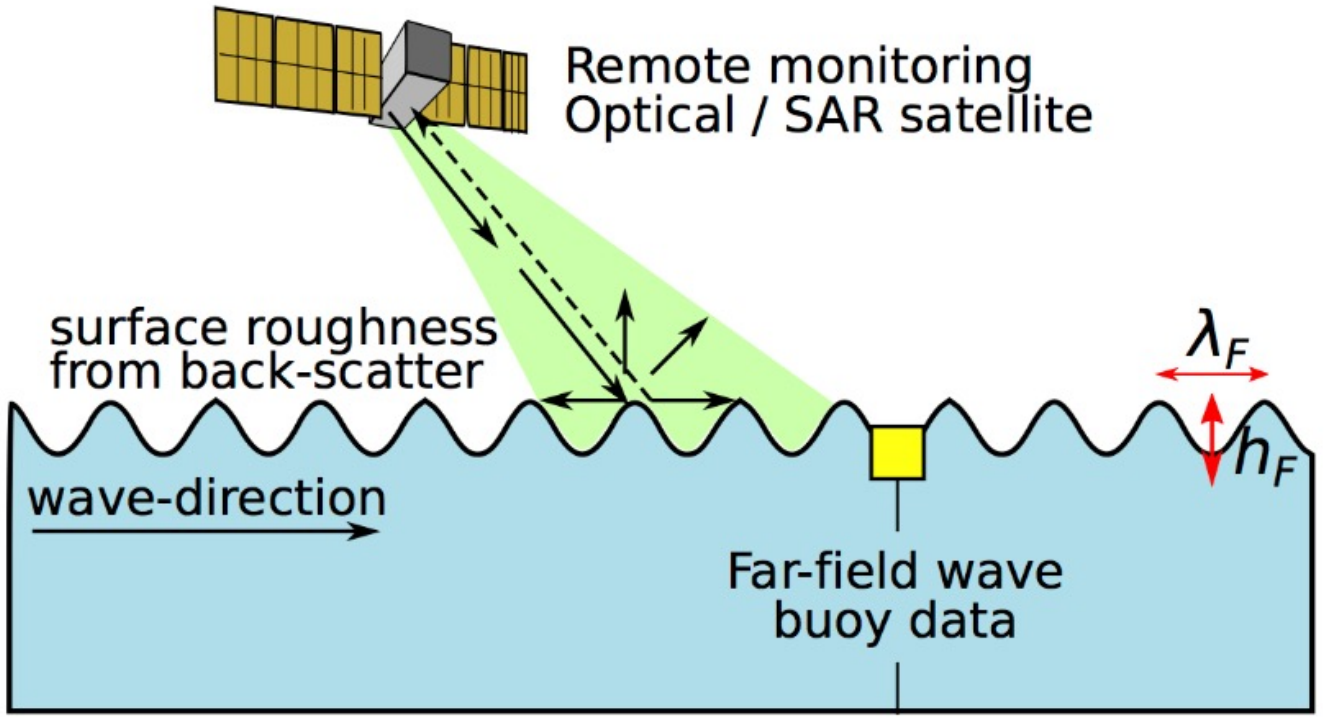
- Reduce O&M logistics costs
- Advance stop-Go decision making
- Improve wave forecasting
  - **SmartWave**
  1. High accuracy wave prediction, <12hrs
  2. High temporal fidelity wave forecast
  3. High spatial fidelity wave forecast

Remote Monitoring and Machine Learning

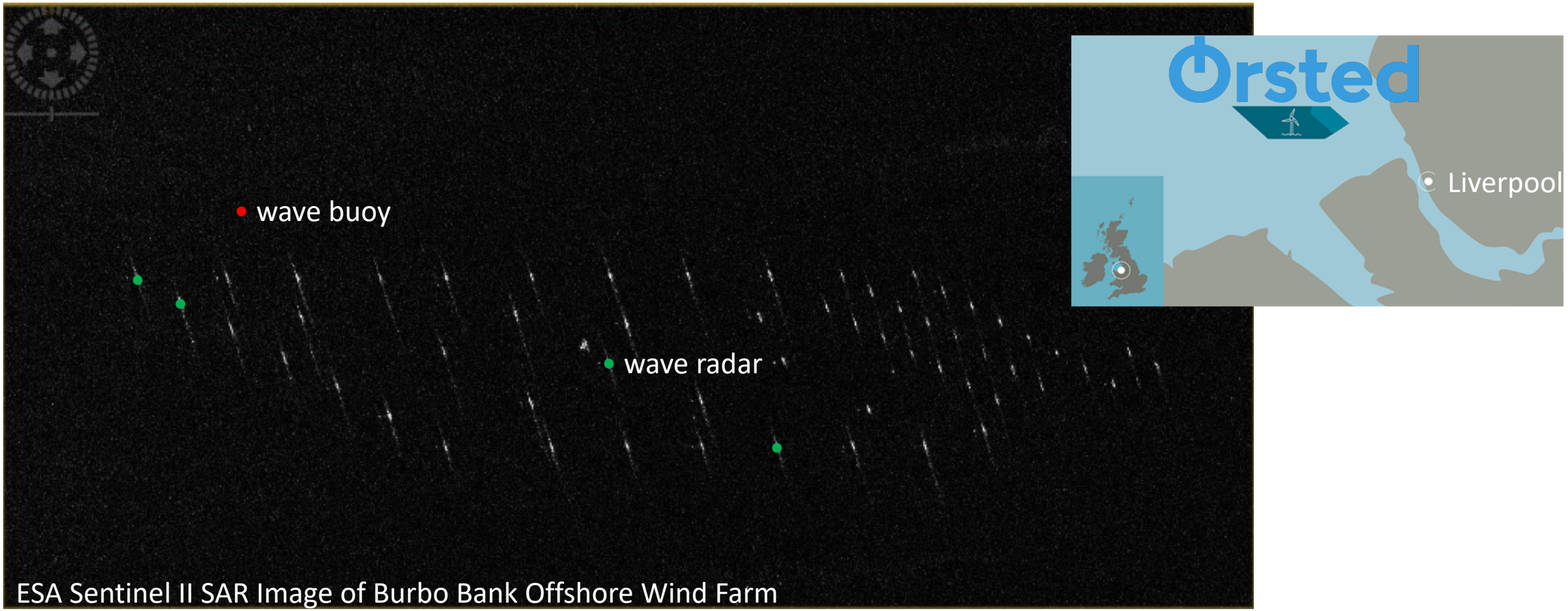
Data Sources
- Synthetic Aperture Radar, Wave Buoy / Radar
- Bathymetry, Time, Date
- Physical Models (Forecasts >12hrs)

Machine Learning
- Artificial Neural Network Training
- ANN Validation

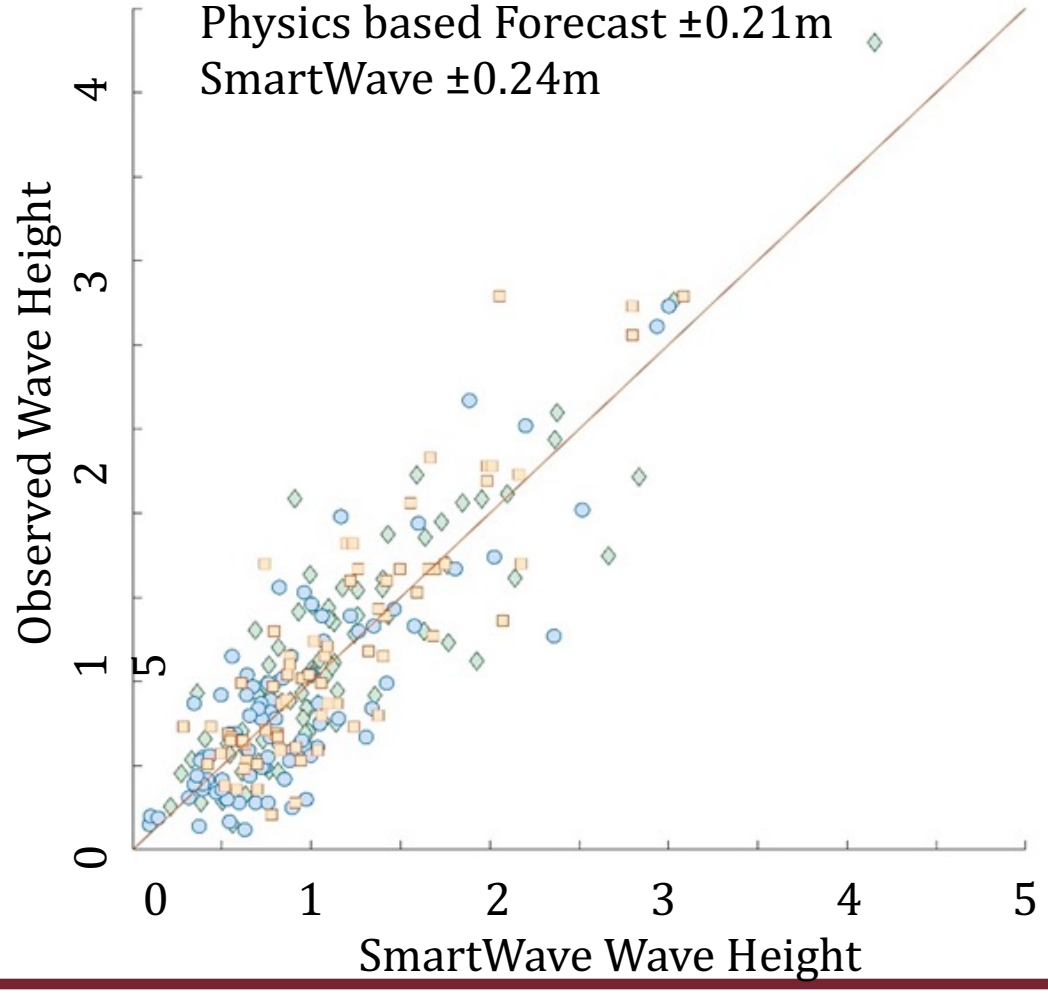
Output
- Sea state (wave height)

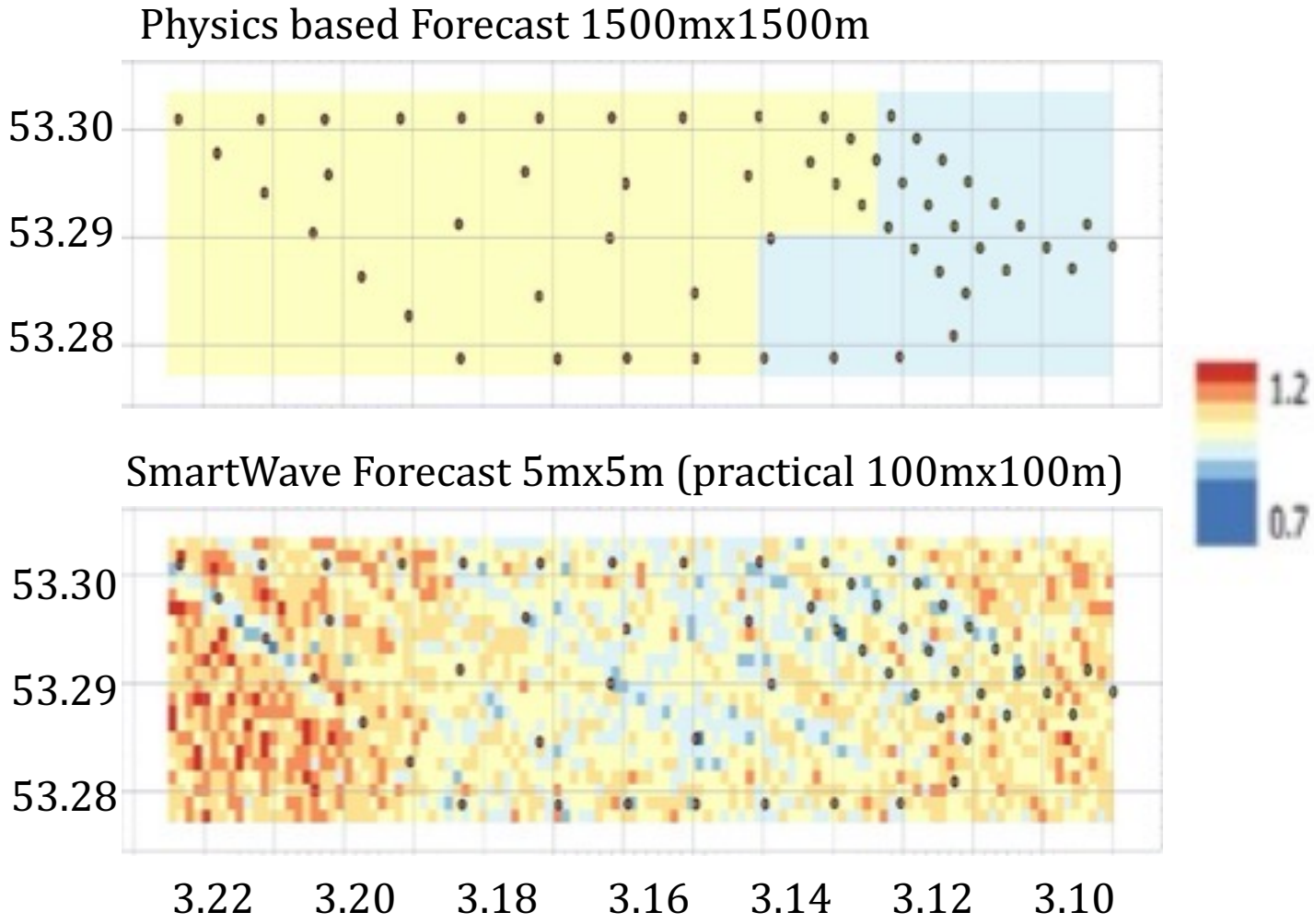


Burbo-Bank Test Site



High-Accuracy & High-Fidelity Forecasts





SmartWave

Applications

- Wave Energy Potential & Site Location
- Wave Energy Convertor design
- Dynamic Control
  - Power Take-Off?
  - Adaptive WEC Positioning?