Hohonu

Synchro

Nearshore wave data from a low-cost sensor deployed on the Santa Cruz Wharf

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Hohonu

Stop Guessing.
Start Acting.

Turnkey coastal and flood sensors, software, analytics

200+ Sites · 18 States · 3M+ Hours of Data

Live Dashboard | Mobile Monitoring | Alerts | API + ArcGIS

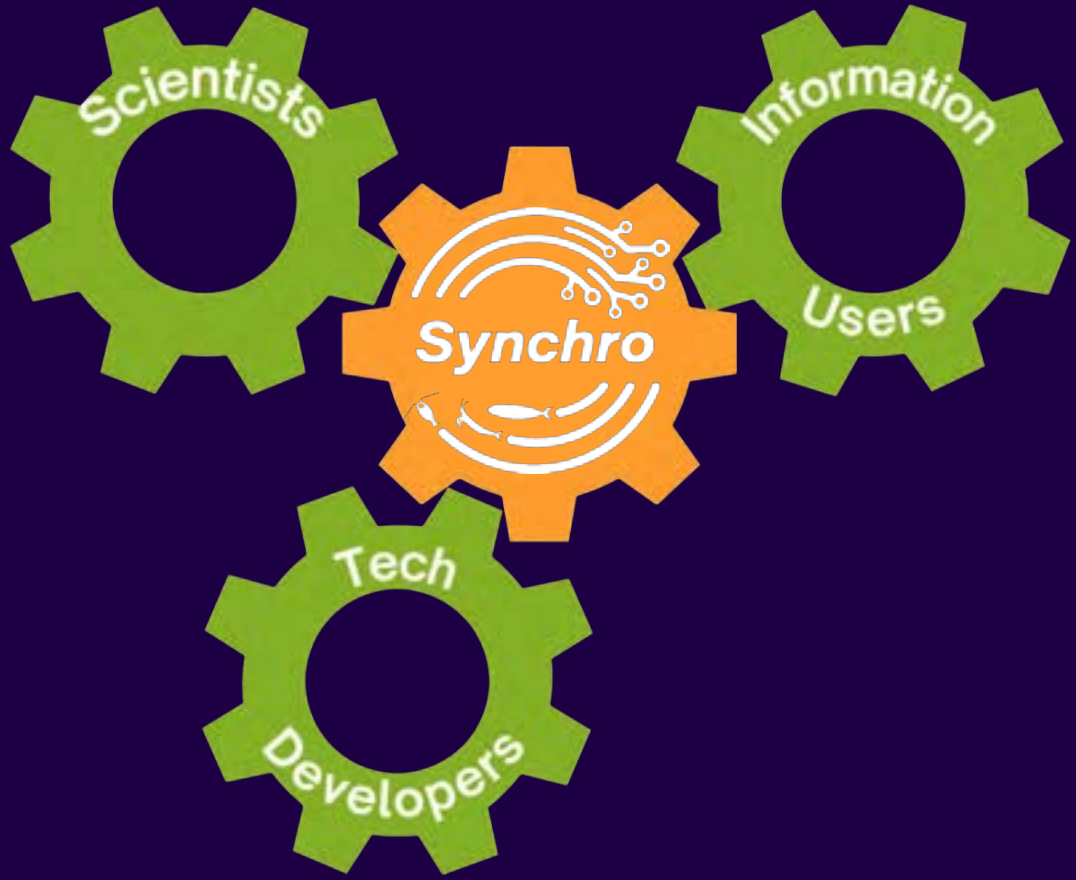
dashboard.hohonu.io

USED BY

Emergency Management
Public Works
DOTs
Scientists
Consultants
and more

Synchronizing technology development with the needs of ocean data users

oceansynchro.io

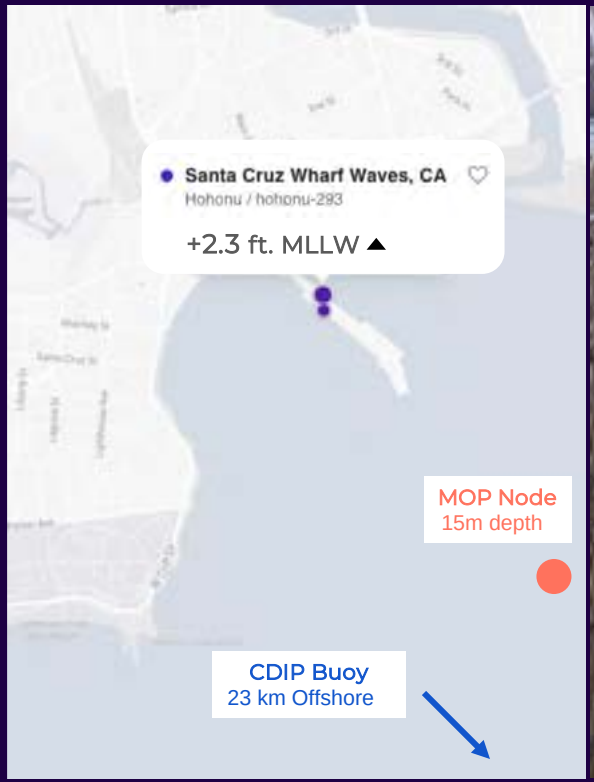


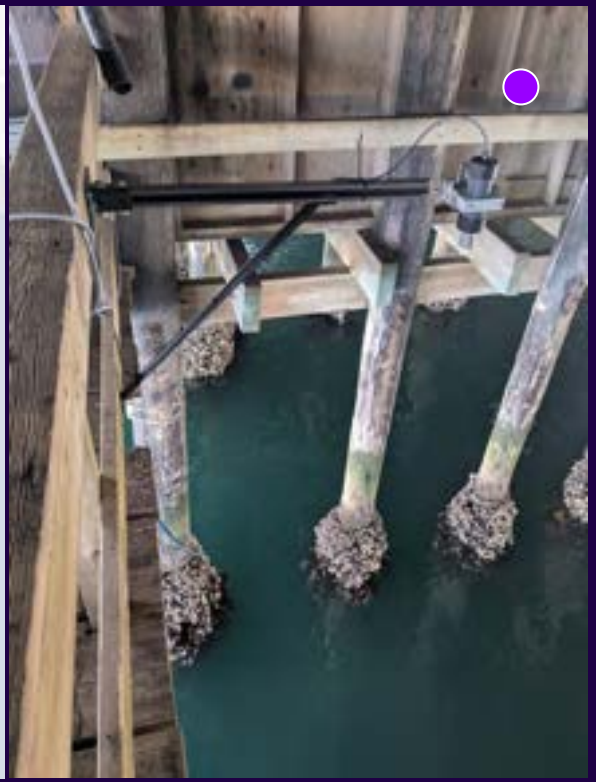
Technology testing

Collecting user feedback

Evaluating use cases

Santa Cruz Wharf Waves Project



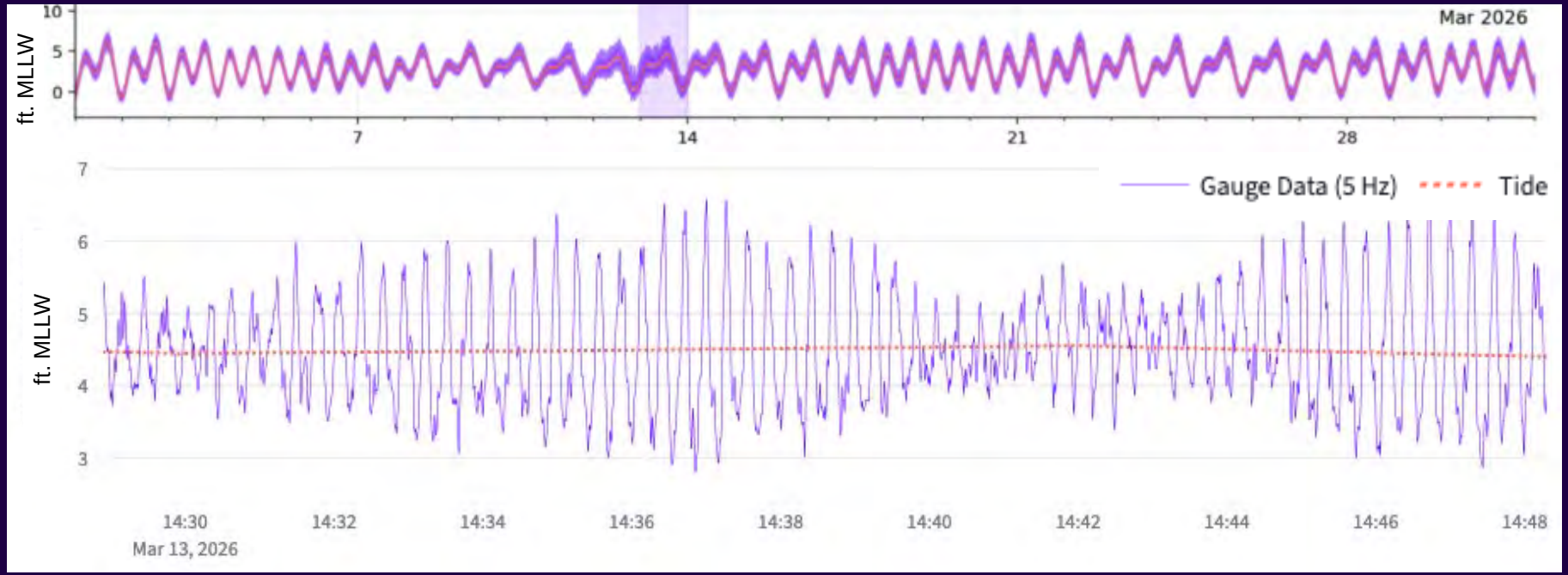


- 120d+ deployment
- Ultrasonic acoustic sampling (5 Hz)
- Shore -powered and local storage

- 1.5+ million waves
- Compared with model output and offshore CDIP Buoy

Santa Cruz Wharf Waves Project

Water level + Full 5 Hz Sampling



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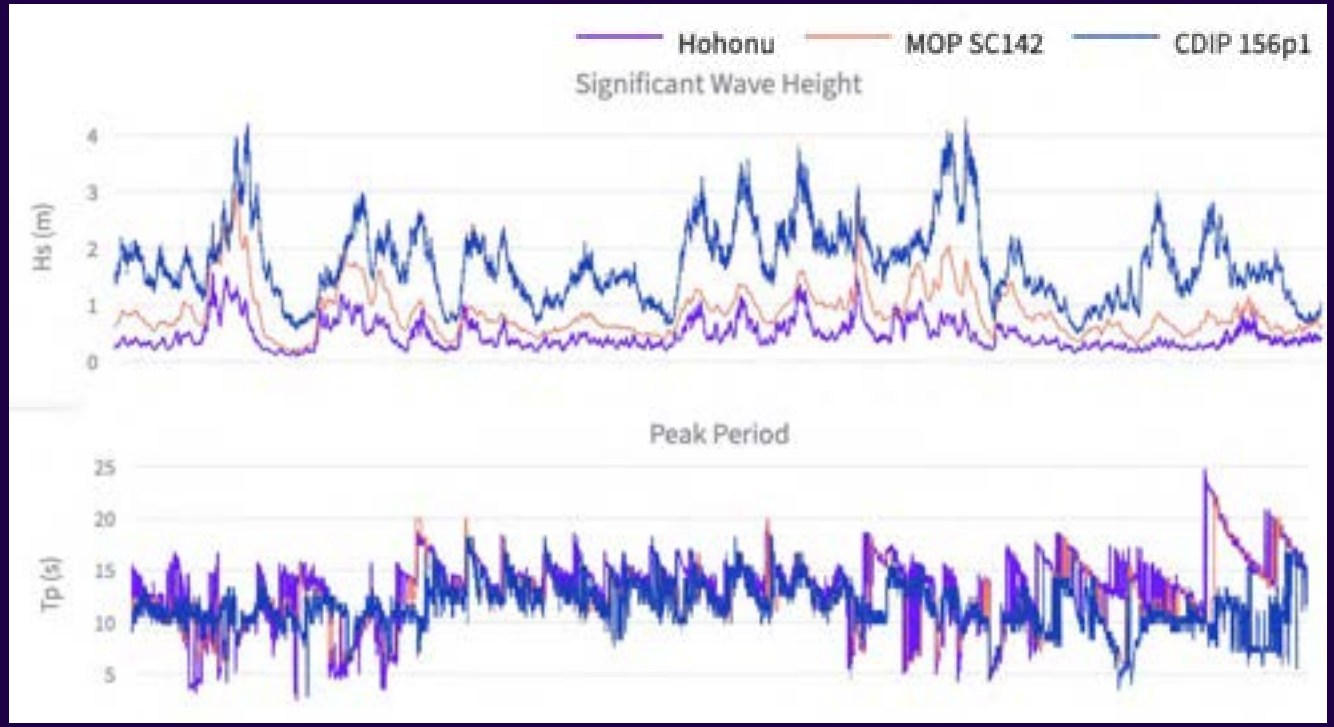
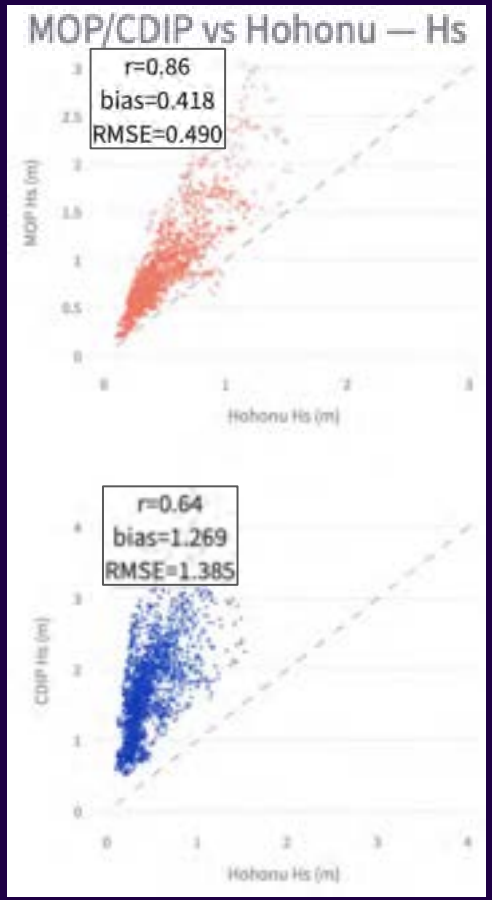
Comparison with Model and CDIP buoy





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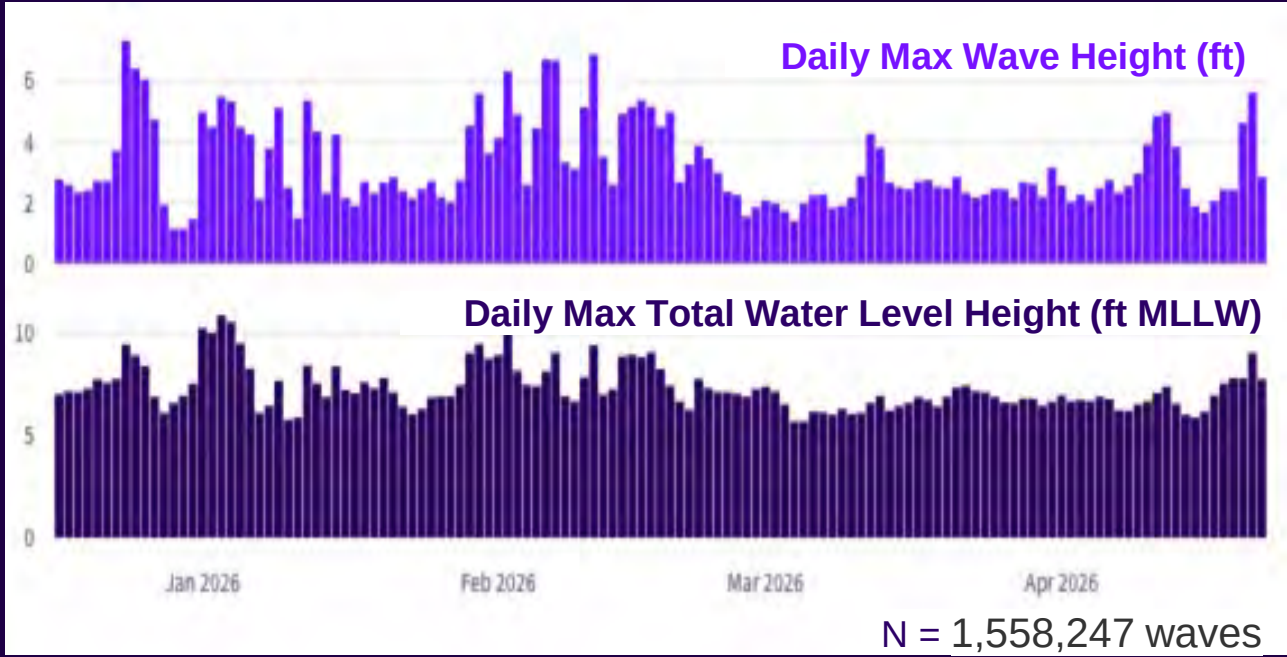
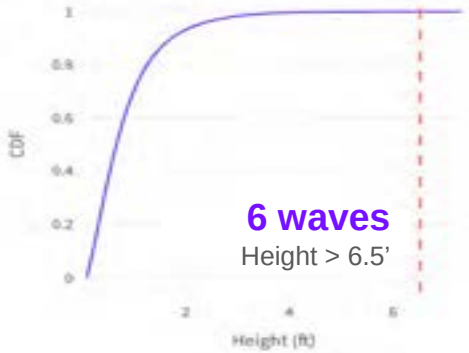
Individual Wave Statistics



N = 1,558,247 waves

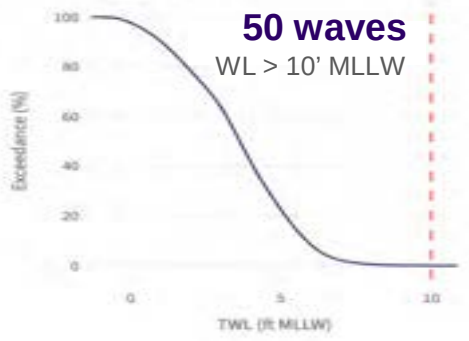
Wave Height Distribution



6 waves

Height > 6.5’

Water Level Exceedances



50 waves

WL > 10’ MLLW

Santa Cruz Wharf Waves Project

Project Takeaways

- Low -cost nearshore wave gauge enables monitoring in new environments.
- Data generally align with MOP/CDIP, but nearshore differences and individual wave analyses demonstrate gauge value.

Use Cases for Nearshore Wave Data:

City & Emergency Ops

- Post -storm assessment
- Wharf damage thresholds
- EOC integration
- Overtopping/flooding studies

Engineering & Research

- Artificial reef modeling
- Infragravity/surf beat monitoring
- Nearshore wave energy characterization

Thank you!

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Project Results: https://sc-waves.streamlit.app/