



Instrumentation

The HWRL has a large inventory of conventional and state-of-the-art instrumentation to measure free surface, velocity, pressure, stress, turbidity, and depth. Data can be made available in near-real time via the web.



Free Surface

- up to 64 resistance-type wire wave gages
- 3 Acoustic depth gages (Banner Engineering, Corp)

Velocity

- 12 3-D acoustic-Doppler velocimeters (Nortek Vectrino)
- 4 2-D acoustic-Doppler velocimeter probe heads
- 4 3-D acoustic-Doppler velocimeters (Sontek Micro)
- Particle Image Velocimeter subsystem (LaVision)

Pressure/Strain

- 15 miniature pore pressure transducers (Druck PDCR81)
- 30 pressure transducers., 0-5 psig (FPG XP1063)
- 3 piezo pressure transducers, 0-14 psig (PCB W106B)
- 5 x 10-ch strain gage conditioners (Vishay Instruments)

Turbidity

- 20 optical backscatter sensor (D&A Instr., OBS-3)

Bathymetry

- 32 component ultrasonic ranging system (SeaTek)
- Laser range finder 0.2–200 m (Dimetix DLS-A30)
- LIDAR survey through subcontract arrangement

Data Acquisition System

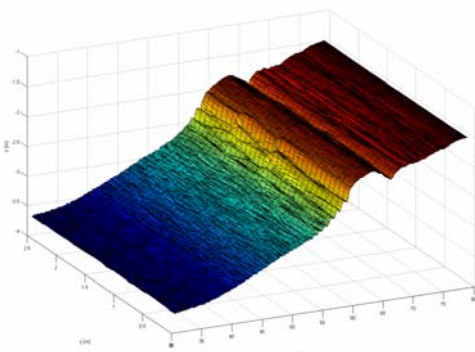
Two Modular PXI architecture DAQ systems, each with

- Built-in signal conditioning and anti-aliasing
- 64 channel, 16-bit analog acquisition,
- Digital pulse generation, external device synchronization
- 16 channel RS-232 / serial data recording

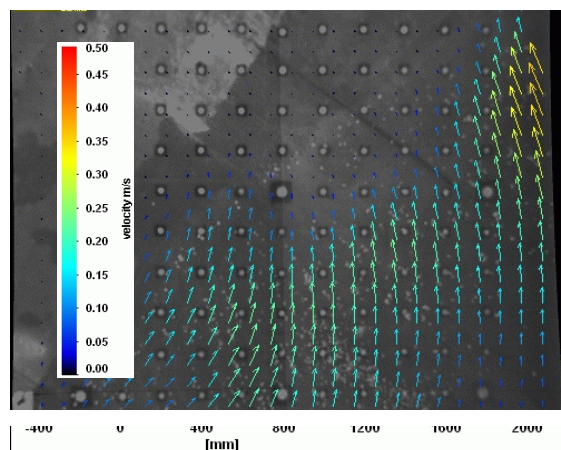
DAQs can be synched to provide 128 analog + 32 digital ch.

Video and Imaging

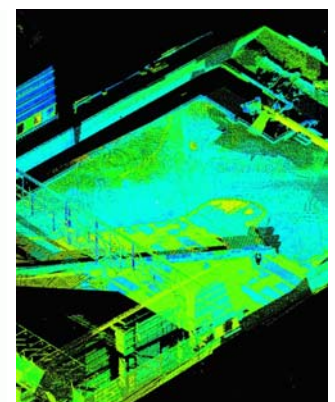
- Submersible camera and light (Deep Sea Power & Light)
- Underwater video camera (Atlantis AUW-5800)
- 4 Web Cameras (Axis 213-PTZ)
- High resolution digital still camera (Cannon EOS 20D)
- ARRI Lighting System (Chimera Perfect Lighting)



Acoustic profiler for sediment transport



Particle Image Velocimetry



LIDAR bathymetry

