UltraLab® ULS

Sensing of Water Level and Waves

Equipment

UltraLab® ULS is optimised for the measuring of water surfaces in Ship Model Basins, Flumes, Hydraulic Laboratories at Universities and Institutes and Simulation Facilities of Physical Models. It is an easy to handle ultrasonic measuring system, which measures water level and waves fast and precisely.

Because of its outstanding accuracy, the small beam angle of <3° and its remote sensing technology almost all kinds of water dynamics (also steep waves) can be measured without interferences or influence to the target. Measurements close to or direct at objects/models are possible. The ULS is easy to handle and due to the wide range of application an universal tool for laboratories.

UltraLab® ULS Specifications

- Various sensors measuring from 30 mm up to 3.4 m
- Superior resolution up to 0,18 mm
- Repetition rate up to 75 Hz
- Low operation effort
- No Maintenance necessary

The ULS 40D system is equipped with four fully assembled independent channels. BNC voltage output (0–10 V) makes an easy integration into every data acquisition system possible.

The UltraLab® ULS is optimised to measure:

- Steep, small and fast waves
- Object contours (oil, ice, bodies, etc.)
- Wave fields around a ship model
- Wetted surfaces
- Flood wave propagation
- Water levels

Applications:

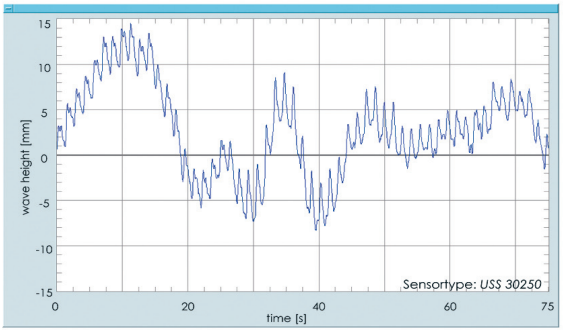
- Optimisation of Ship Models
- Measurements in Flood- and Water Surface Models
- Optimisation of Hydraulic Constructions
- Determination of Wave Parameters
- Analysis of Wave Fields
- Measurement of Object Contours

UltraLab® ULS

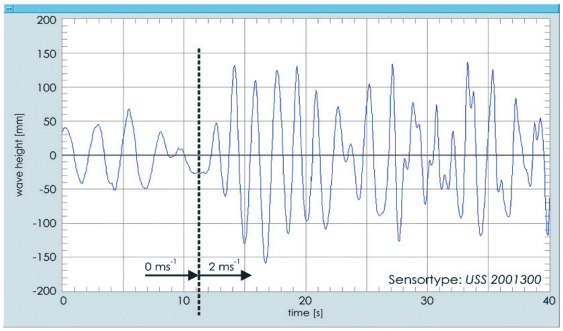
UltraLab® ULS

Sensing of Water Level and Waves

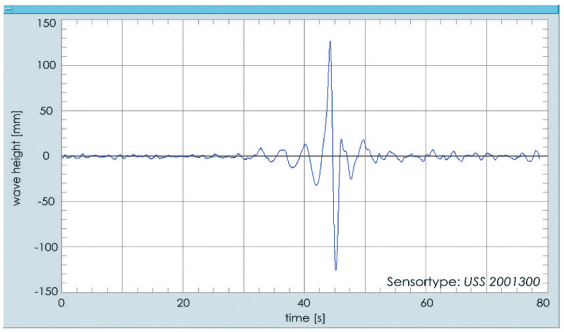
Available Sensors	USS 325	USS 635	USS 20130	USS 35340
Blind area:	30 mm	60 mm	200 mm	350 mm
Working range:	250 mm	350 mm	1300 mm	3400 mm
Frequency:	320 kHz	400 kHz	200 kHz	120 kHz
Techn. resolution:	0.18 mm	0.18 mm	0.18 mm	0.18 mm
Reproduceability:	±0.15%	±0.15%	±0.15%	±0.15%
Output update:	75 Hz	75 Hz	50 Hz	20 Hz
Analogue output:	0–10 V	0–10 V	0–10 V	0–10 V
Protection class:	IP 65	IP 65	IP 65	IP 65



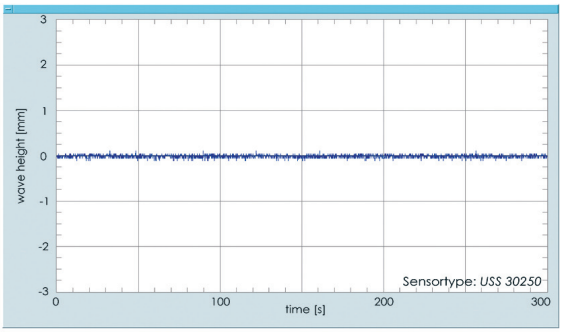
VWS Berlin Model Basin, Germany
Superposition of two different waves



Hamburg Ship Model Basin, Germany
Planar motion (v = 2 ms^{-1}) towards incoming wave



Potsdam Ship Model Basin, Germany
Local reading of a single wave packet



University of Applied Sciences Suderburg, Germany
High resolution measurement of water level

Key References:

AMC Australian Maritime College · Università degli Studi di Bari · Universität Bremen · CEHIPAR Canal de Experiencias Hidrodinámicas de El Pardo · HSVA · NTNU Norwegian University of Science and Technology · Lehrstuhl und Institut für Wasserbau und Wasserwirtschaft, RWTH Aachen · SVA · TU Berlin · TU Delft · VTT · Marine Nationale

Representative of General Acoustics:

General Acoustics e.K.
Am Kiel-Kanal 1
24106 Kiel / Germany
Phone: +49 431 5 80 81 80
info@GeneralAcoustics.com
www.GeneralAcoustics.com

UltraLab® ULS