HYDRALAB+, Adaptation for Climate Change

Free Access to Major Experimental Facilities
Call for Proposals

HYDRALAB+ is a network of research institutes with world-leading hydraulic and hydrodynamic experimental facilities. The HYDRALAB+ project is funded by the European Commission through the Horizon2020 programme to strengthen the coherence of experimental research by improving the infrastructures with a focus on adaptation to climate change issues.

This call invites all European scientists to submit a research proposal to undertake experiments in one of the 16 unique experimental facilities in the field of hydraulic, environmental, oceanographic and ice engineering research. Facilities will be made available free-of-charge with travel and subsistence support for scientists involved. The European Commission finances access for groups of researchers who work in the EU and Associated States (EU States and Albania, Bosnia & Herzegovina, Faroe Islands, Iceland, Israel, Moldova, Montenegro, Norway, Serbia, Switzerland, Turkey and Ukraine).

DHI is one of the 10 hydraulic institutions providing access to major experimental hydraulic facilities through the HYDRALAB+. European scientists are invited to submit their proposal to apply for free access to the facilities. DHI provides access to its two multidirectional wave basins: the shallow water facility and the offshore (deep-water) basin. A brief description of these facilities is given below.

The deadline for submitting proposals is 19 February 2016.

It is highly recommended that you send an email to the institute of the facility of your choice (provider) to inform them of your intention to submit a proposal. This will provide an opportunity for feedback and assistance in project design.

See www.hydralab.eu/calls.asp for further details regarding this call for proposals or contact Thor Ugelvig Petersen at tup@dhigroup.com.

Shallow Water Basin

DHI's Shallow Water Basin for combined waves and current is 35 m long and 25 m wide with an overall depth of 0.8 m. The basin is ideal for model testing when the effects of combined waves and current are of major importance, for instance scour around structures, and loads on fixed or floating coastal and offshore structures.

Figure 1: Testing of floating systems in DHI's Shallow Water Basin

Waves

3D wave generation with a new multi-directional segmented wavemaker. With a paddle height of 1.20 m, the wavemaker is designed to operate at water depths between 0.2 m and 0.8 m.

The wavemaker is equipped with DHI AWACS – Active Wave Absorption Control System which is a means of avoiding spurious reflection from a wavemaker. The technique allows for full control over the incident waves, even when testing highly reflective structures in a basin.

Furthermore, DHI's Shallow Water Basin provides the option of secondary uni-directional wave generation by movable piston type wavemakers.

Figure 2: 3D wavemaker equipped with DHI AWACS Active Wave Absorption Control System

Current

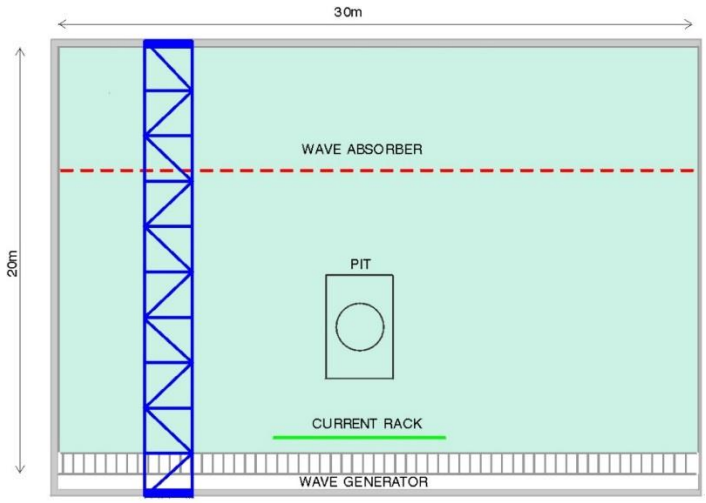
Current is generated by external recirculation of water. The additional moveable wavemakers provide the option of co-linear wave-current generation by having the water injected underneath the wavemakers.

Wind

Wind loading on vessels or structures can be simulated by computer-controlled wind fans.

For further information, contact Jesper Fuchs at juf@dhigroup.com.

Offshore Wave Basin



DHI's Offshore Wave Basin is 20 m long and 30 m wide with an overall depth of 3 m and a 12 m pit.

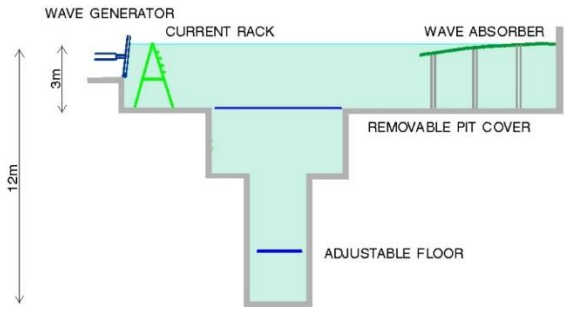


Figure 1: Layout of DHI Offshore Wave Basin

Waves
Short-crested (3D) waves and swell are generated by 60 individually controlled flaps. A parabolic wave absorber located opposite the wavemakers minimises reflections. Practically any wave spectrum and combination of wave spectra may be generated.

Current
Current is generated in the basin using a technique of entrainment. Water is pumped through high-pressure nozzles, located in a rack in front of the wave generators.

Wind
Wind load on vessels or structures can be simulated by computer-controller wind fans.

Figure 2: Testing an FPSO in DHI's Offshore Wave Basin

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