The hydraulic design of coastal structures is a complex task. In the past decades physical scale models often were the only possibility to verify the design. Nowadays computer models are very powerful but some physical processes still cannot be calculated accurately. Therefore physical scale models are still intensively used as design tools in almost all major coastal engineering projects.

Since the 80’s of the previous century Flanders Hydraulics Research has invested in 3 wave facilities: 2 wave flumes for two-dimensional scale models and 1 wave basin for three-dimensional scale models. The dimensions (L x W x D) of the small wave flume are 4.1 m x 0.7 m x 0.86 m, the large wave flume 70 m x 4 m x 1.4 m and the wave basin 17.5 m x 12.2 m x 0.45 m.

This poster gives a limited overview of some scale models dealing with research on coastal structures of Flanders Hydraulics Research.

Pressure cells in a first mast registered water pressures caused by wave overtopping at different levels above the foundation. A second mast in the model was connected at the foundation with a leaf spring (with strain gauge) to measure the moment at the bottom of the mast.

In the large wave flume comparative hydraulic stability tests were performed for 6 different armour units: Tetrapode, Dolos, Antifer cube and Haro. The stability factor $K_d$ of the armour units, the wave run-up on top of the armour layer and the wave reflection of the armour layer were investigated.

Pressure cells in a second mast registered water pressures caused by wave overtopping at different levels above the foundation. Stability of the Zeebrugge breakwaters [1985] FHR was partner in the European research project OPTICREST. In a 2D physical model the wave run-up at the Zeebrugge breakwater was modelled and compared to run-up measured in Zeebrugge.

Stability of the Zeebrugge breakwaters [1985]

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Stability of the Binnenrede in port of Zeebrugge [1985-1987]

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