

Ludwig-Franzius-Institute for Hydraulic, Estuarine- and Coastal Engineering



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Great Wave Flume (GWK)

In 1996 the [Coastal Research Centre \(FZK\)](#) as a 'common central facility of the Leibniz University of Hannover and the Technical University of Braunschweig' was established in the context of greater coordination of coastal research and to encourage interdisciplinary, national and international cooperation.



The **Large Wave Flume (GWK)** is the world's largest publicly accessible research facility of its kind. It went into operation 1983. Through the cooperation of the four following partner institutions the best use of this research facility is guaranteed. The cooperation although strengthen competitiveness, along with a substantial improvement of conditions for the training of young scientists in hydraulic engineering and coastal engineering.

The overall objective of the investigations in the Great Wave Flume (GWK) are **large-scale physical model**

tests, the scientific investigation of hydrodynamic, morph dynamic and ecological processes at the coast and in the coastal zone, including its effects on hydraulic engineering structures.

Partner institutes of FZK

- [Franzius-Institute for Hydraulic, Estuarine and Coastal Engineering \(LUH\)](#)
- [Institute for Geotechnical Engineering \(LUH\)](#)
- [Leichtweiß Institute of Hydraulic Engineering \(TU-BS\)](#)
- [Institute of Soil Mechanics and Geotechnical Engineering \(TU-BS\)](#)

Technical details of GWK

The Great Wave Flume (GWK) is a covered hutch-design. With dimensions of approximately 310 meters of usable length, a width of 5 m and a depth of 7 m, GWK is currently the largest free accessible wave tank in the world.

With the hydraulically driven machine shaft (900 kW) with a maximum stroke of ± 2.10 m regular waves and waves in deep and shallow water conditions can be simulated. Regular waves can be generated with wave heights up to 2.0m; wave spectra with significant wave heights up to approximately 1.30 m.

Further information on the FZK and GWK and can be found on the [website](#) .

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