



## Exercise: Wave measurements and analysis

The purpose of this exercise is to get knowledge about the analysis of irregular waves.

Wave data from wave basin experiments are provided.

Create groups of 2-3 persons. Each group will carry out wave analyses using WaveLab of the 3 pre-acquired sets of wave data.

Analyze the acquired data using WaveLab3 wave analysis software:

- Time and frequency domain (single wave gauge).

If time allows, also try executing:

- Reflection analysis.
- 3-D wave analysis.

A water depth in laboratory of 0.50 m can be assumed.

Things to observe, discuss and put in your exercise report:

- Importance of time series length.
- Importance of sample frequency.
- Compare time and frequency domain parameters – reasons for discrepancies
- Compare wanted and obtained wave parameters – reasons for discrepancies
- Effect of wave breaking on the wave parameters – especially spectral shape
- Importance of wave gauge inter-distances for reflection analysis
- Importance of number of wave gauges for reflection and 3-D wave analysis
- Compare obtained wave parameters from the 3 different analysis methods – reasons for discrepancies
- Other observations ...