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Leichtweiß-Institute for Hydraulic Engineering and Water Resources
Department for Hydromechanics and Coastal Engineering



Planning of the laboratory experiments at TU-BS

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RAPSODI Meeting | 15. May 2014 | METU, Ankara

Contents

1. Available measuring devices at LWI
2. Selection of the structure to be investigated
3. Time schedule

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Measuring devices available at LWI

- Wave gauges (water free surface elevation)
- Current meters (flow velocity):
 - Acoustic-Doppler Velocimeters (ADV)
 - Electromagnetic current meter (ECM)
 - Propeller-type current meters
- Force transducers (wave-induced forces)
- Pressure transducers (wave-induced pressure → forces)
- Accelerometer (structure acceleration when being swept away by a wave)
- Video cameras

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Twin-wave flume at LWI



Length: ca. 90 m
Width: 1.0 und 2.0 m
Depth: ca. 1.20 m

Wave type: regular/irregular waves
solitary wave
tsunami bore

Selection of the structure to be investigated

- Selection of case study based on results of deliverable D2
- Selection of structure type:
 - Buildings (private, commercial, industrial)
 - Coastal defences
 - Infrastructure / harbour structures
- Selection of structure failure mechanism
 - With or without effect of debris impact
- Specification of experimental set up and measuring devices
 - Variation of the angle of wave attack through different structure orientations in respect to flow direction
- Two principle tsunami generation methods:
 - Tsunami bore → structure placed on a horizontal flume bottom
 - Broken solitary wave → structure placed on a platform

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Time schedule

- Meeting at TU-BS prior experiments: **beginning of June 2014**
 - Visit to the laboratory at LWI, TU-BS
 - Introduction to the data acquisition software
 - Finalizing the experimental set up and programme
- Potential meeting at the ICCE conference: **14 - 20 June 2014**
- Performance of the laboratory experiments at TU-BS: **July 2014, 4 weeks**
 - Construction of the model by TU-BS
 - Calibration of measuring devices together with METU
 - Performance of the experiments together with METU
- Data analysis: **August - September 2014**
- Workshop: **late autumn**
- Deliverable D7: **end of October 2014**



Thank you for your attention

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