



Adaptation For Climate Change

HYDRALAB+ Next Generation Researchers's Workshop

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Detailed Programme and Application:

www.hydralab.eu/taking-part/hydralab-next-generation-researchers-workshop/

The EC-funded HYDRALAB+ project is organizing a researcher training programme for early career researchers to take place in Toulouse, France (Wednesday 18 - Friday 20 January 2017). HYDRALAB+ will fund the travel (up to 400 euros) and accommodation will be provided, along with 4 meals (on 18, 19 and 20 lunch, and evening meal on 18), for up to 16 researchers to attend this event. Participants must arrive in Toulouse on Tuesday the 17th and the Workshop will finish on Friday the 20th at 16:00.

The programme for the meeting is outlined below. If you think this workshop will benefit your research and you would like to attend the workshop, please submit your online application from (ADD WEBLINK). The submission deadline is 5th December 2016. Your application will need to include a 200-word justification of why the workshop is relevant to your research and you will also need to include a brief CV (1-page maximum).

The aim of the workshop is to demonstrate optical measurement techniques for a variety of different laboratory experiments and to develop an improved understanding of scaling theory and the practical implications of scaling associated with different types of physical models. The workshop will emphasise hands-on practice of optical measurement techniques with supporting lectures to introduce and develop key ideas. Interpretation and analysis of the data you collect will enable participants to improve their analytical skills and understanding of scaling problems and limitations whilst developing their own interpretations and conclusions. This workshop is intended to be an introduction to researchers who are interested in developing their skills to perform more complex experiments dealing in hydraulics, sediment transport and ecohydraulics. The workshop will be organised into four main sections:

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- 1- **Lectures on scaling issues in flume experiments.** This session will outline the theory underlying approaches to scaling physical models and address the issues raised during the down-scaling from reality to physical models. An additional lecture will give an overview of the different optical measurement techniques available for flume experiments conducted at different scales.
- 2- **Laboratory experiments.** The participants will perform optical measurements in small groups on four different experiments : point velocity measurements of a developing turbulent boundary layer in a large flume using LDA (Laser Doppler Anemometry; see fig 1), plane velocity measurements of a turbulent flow over a down-scaled urban canopy using PIV (Particle Image Velocimetry, see fig 2), free surface and bed morphodynamics of a down-scaled cliff erosion experiment using ombroscopy (see fig 3), and morphodynamics of an isolated down-scaled dune (barchan, see fig 4) using optical altimetry by fringe projection.
- 3- **Data analysis.** Participants will perform post-processing of their measurements using dedicated software. The limits, advantages and weak points of the different measurement techniques as well as the down-scaling approach will be discussed from a very practical perspective.
- 4- The seminar will end with two lectures on state-of-the-art laboratory measuring equipment, like 3D-3C scanning PIV (volumetric PIV) and an overview of scaling issues associated with research in Hydralab+.

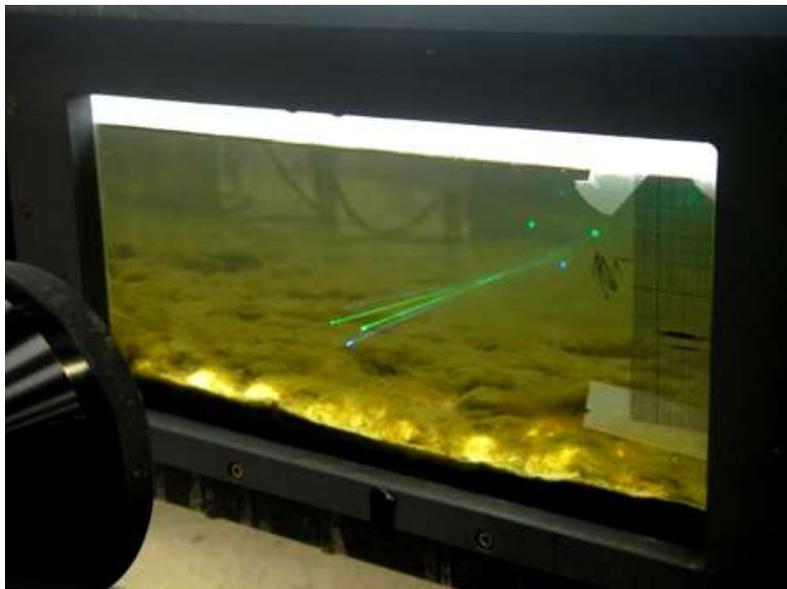


Fig 1 : point velocity measurement by LDA in a turbulent boundary layer above a biofilm covered bed

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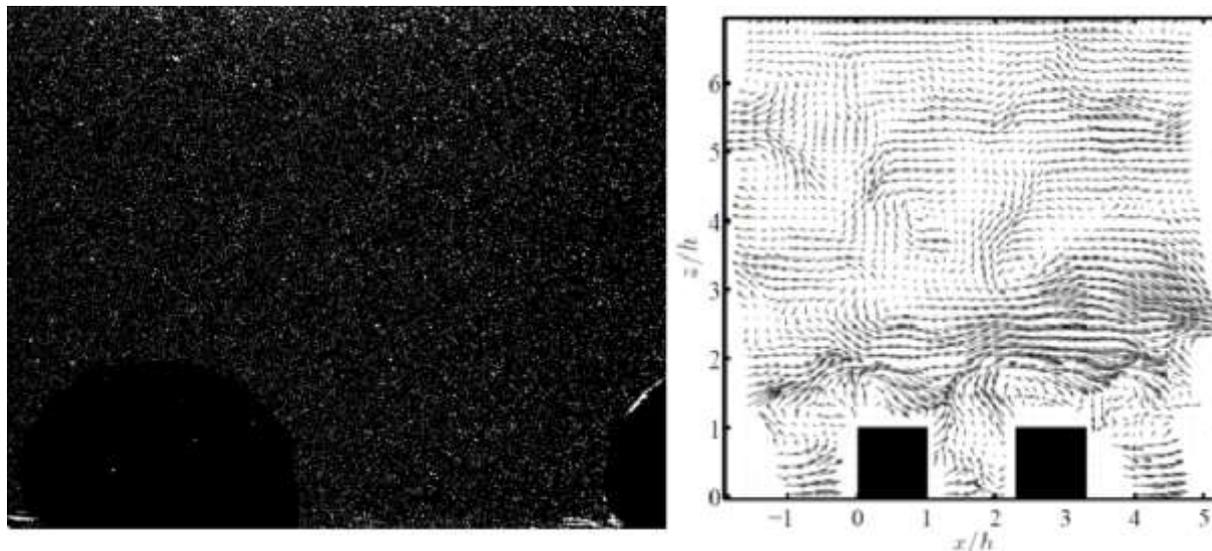


Fig 2 : plane velocity measurement by PIV in turbulent flows above rough beds. On the left : typical particle image recorded by the PIV camera. On the right : typical velocity field obtained by PIV software analysis of two successive particle images for a flow above a urban-like canopy.

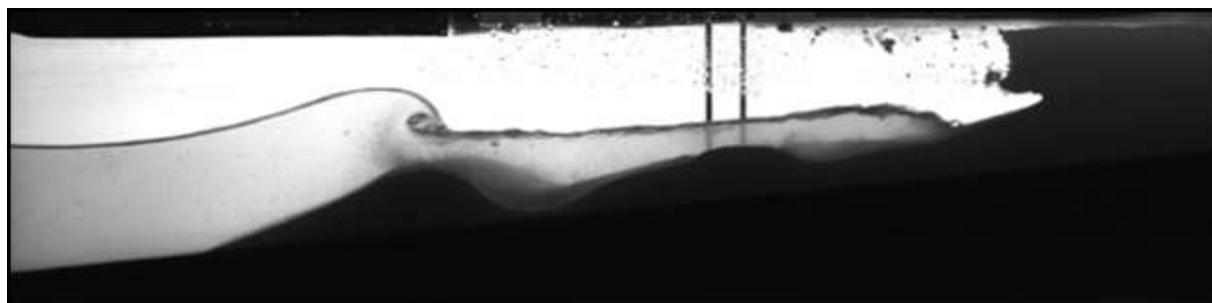


Fig 3 : free surface and bed morphology measurement by ombroscopy in a cliff erosion experiment

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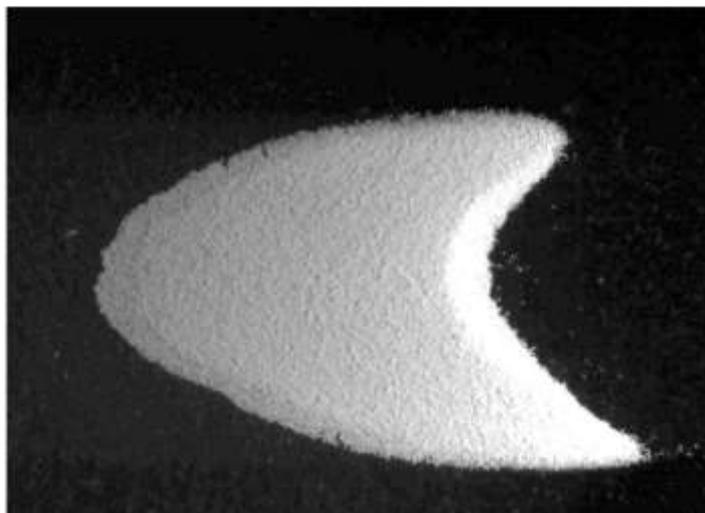


Fig 4 : top view of a Barkhane (isolated dune) propagating from left to right in the same direction as the flow.

Workshop Details:

If you are interested in applying, please apply via the web page by 5th December 2016 on: www.hydralab.eu/taking-part/hydralab-next-generation-researchers-workshop/. You should explain why the workshop will benefit your research or PhD studies (200 words) and attach a 1-page CV.

Successful applicants will be offered a place on the workshop by 16th of December 2016. You will be able to claim up to 400 Euros towards your transport costs. Accommodation and some meals are provided.

Contact:

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