Training School organizers and Tutors

The 2nd edition of the Training School "Hands-on course on experimental and numerical modelling of wave-structure interaction" is co-organized by:

- Maritime Engineering Laboratory of Florence University, **LABIMA** (https://labima.unifi.it) and joint laboratory **A-MARE** of Florence University
- Developers of the **DualSPHysics** SPH open-source software (https://dual.sphysics.org/),
- **GNRAC** (Italian National Research Group on Coastal Environment, http://www.gnrac.it/).

The following tutors will give lectures and assist trainees during experimental and numerical modelling practice:

- Prof. Lorenzo Cappietti, GNRAC and University of Florence, Italy
- Dr. Irene Simonetti, University of Florence, Italy
- Eng. Andrea Esposito, University of Florence, Italy
- Prof. Moncho Gomez Gesteira, Universidade de Vigo, Spain
- Prof. Alejandro J.C. Crespo, Universidade de Vigo, Spain
- Prof. Maite deCastro, Universidade de Vigo, Spain
- Dr. José M. Domínguez, Universidade de Vigo, Spain
- Dr. Corrado Altomare, Universitat Politècnica de Catalunya, Spain
- Ivan Martínez- Estévez, Universidade de Vigo, Spain

Application and Registration Fees

Applications to attend the Training School can be made at:

https://www.labima.unifi.it/vp-210-training-school-2nd-edition-12-14-july-2022.html

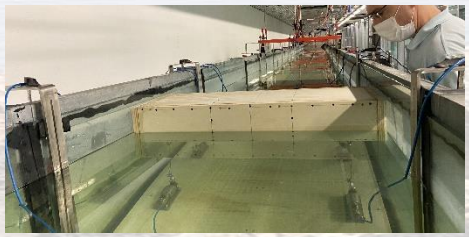
The following registration fees are applied:

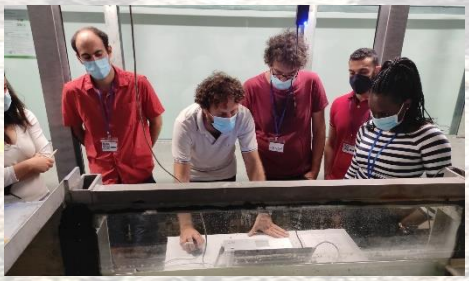
- Master or PhD students: 150 €
- GNRAC Affiliated: 100 €
- Others: 200 €

Training School contents

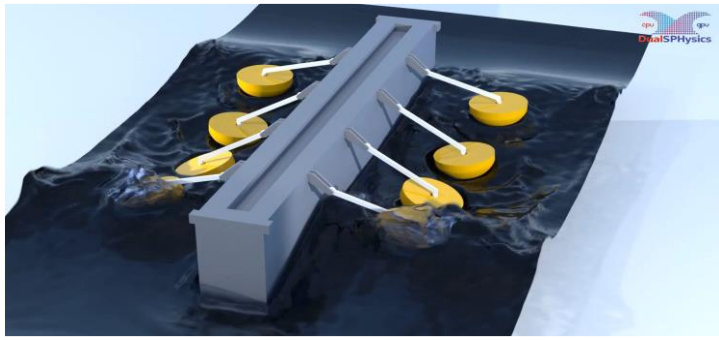
The Training School aims at providing a basic introduction to experimental and numerical modelling approaches for simulating wave-structure interactions. Experimental modelling will be performed in a physical wave flume, while numerical modelling will be performed in a virtual wave flume.

The course has a duration of 3 days, with 6 hours of training per day, and it is going to be held in Florence (Italy) by using **LABIMA-WCF1** wave-current flume and the **DualSPHysics** Smoothed Particle Hydrodynamics (SPH) software package. The first day will include lectures on laboratory tests on laboratory test practice, fundamental of wave energy conversion and an introduction to **DualSPHysics** SPH open-source code. The second and third days will alternate theory and practical sessions, both in the laboratory and with numerical modelling. The Training School is specifically designed for those interested in developing numerical and experimental modelling techniques of Wave Energy Converters.





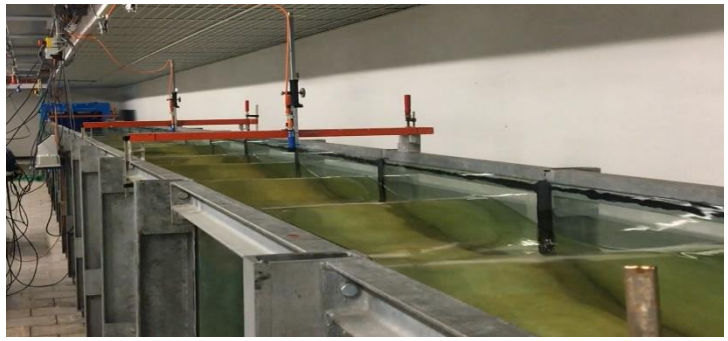
UNIVERSITÀ DEGLI STUDI FIRENZE
DICEA DIPARTIMENTO DI INGEGNERIA CIVILE E AMBIENTALE
A-MARE ACQUE MARE AMBIENTE ENERGIA Laboratorio Congiunto
DualSPHysics



TRAINING SCHOOL

Hands-on course on experimental and numerical modelling of wave-structure interaction

2nd Edition



12 – 14 July 2022

School of Engineering - Florence University

PIN POLO UNIVERSITARIO CITTÀ DI PRATO
SERVIZI DIDATTICI E SCIENTIFICI PER L'UNIVERSITÀ DI FIRENZE

Training School Program

12th July 2022

09:00 – 09:30 Registration of participants

09:30 – 11:00 Fundamental of experimental modelling: dimensional analysis and basics of similarity in maritime models (*L. Cappietti*)

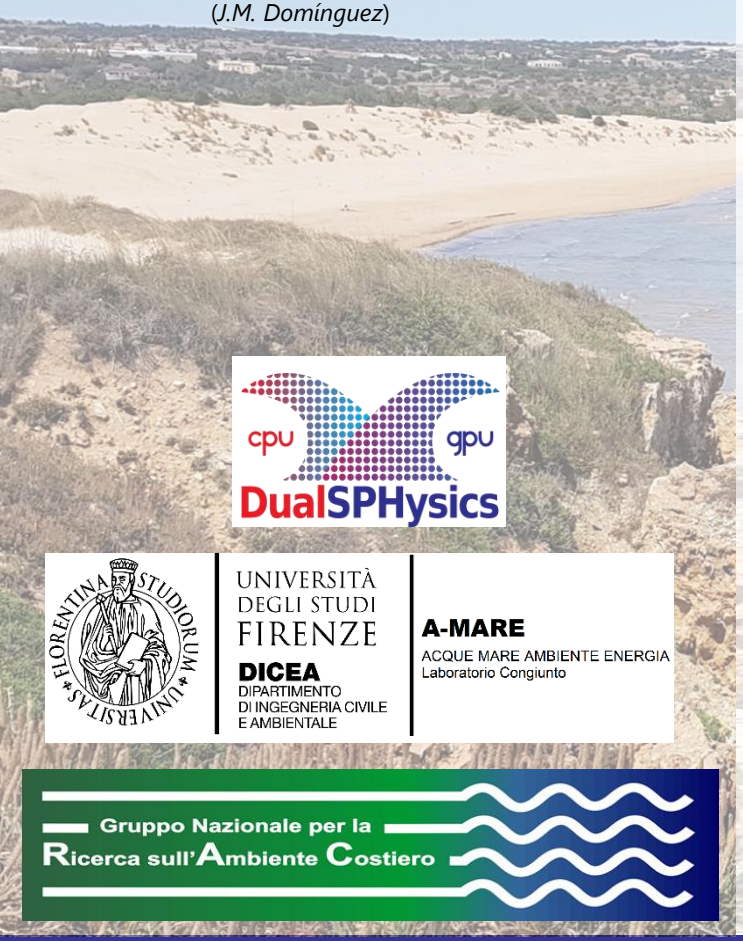
11:00 – 11:30 **Coffee Break**

11:30 – 13:00 Introduction and fundamentals of wave energy and conversion (*I. Simonetti*)

13:00 – 14:00 **Lunch Break**

14:00 – 15:30 Introduction to Smoothed Particle Hydrodynamics models (*M. Gómez-Gesteira*)

16:00 – 17:00 Introduction to the DualSPHysics package (*J.M. Domínguez*)



DualSPHysics

UNIVERSITÀ DEGLI STUDI FIRENZE
DICEA DIPARTIMENTO DI INGEGNERIA CIVILE E AMBIENTALE

A-MARE ACQUE MARE AMBIENTE ENERGIA Laboratorio Congiunto

Gruppo Nazionale per la Ricerca sull'Ambiente Costiero

Training School Program

13th July 2022

09:00 – 10:00 Introduction to the models to be tested and to laboratory practice (*A. Esposito*)

10:00 – 13:00 Laboratory experiments on small-scale models in LABIMA-WCF1: tests on a fixed structure (*L. Cappietti, A. Esposito, I. Simonetti*)

13:00 – 14:00 **Lunch Break**

14:00 – 17:00 Laboratory experiments on small-scale models in LABIMA_-WCF1: tests on a floating moored structure (*L. Cappietti, A. Esposito, I. Simonetti*)

14th July 2022

09:00 – 10:00 Validations and applications of DualSPHysics on coastal engineering (*C. Altomare*)

10:00 – 10:30 **Coffee Break**

10:30 – 13:00 Practice with the numerical model I: Cases to learn (*C. Altomare, M. Gómez-Gesteira, J.M. Domínguez, I. Martínez and M. de Castro)*

13:00 – 14:00 **Lunch Break**

14:00 – 15:30 Practice with the numerical model II: Simulation of the fixed structure tested in the laboratory (*C. Altomare, J.M. Domínguez*)

16:00 – 17:30 Practice with the numerical model III: simulation of the floating moored device. (*C. Altomare, J.M. Domínguez, I. Martínez and M. de Castro*)

Important dates

Deadline for applications **10-06-2022**

Acceptance notification: **12-06-2022**

Registration fees due on: **15-06-2022**

Location of the Training School

Lessons and Training will take place in

- **Room 55** - School of Engineering, via di Santa Marta 3, 50139, Florence, Italy.
- **LABIMA** - Laboratory of Maritime Engineering– School of Engineering, Via di Santa Marta 3, 50139, Florence, Italy.

More info on how to get to LABIMA can be found here

Requirements for trainees

Trainees need to have their own personal computer to run DualSPHysics simulations and training.

A list of software that should be installed beforehand and a link to download additional material needed is going to be sent via email in the days before the Training School.

Further Information

Further information or clarifications can be obtained via the following e-mail address: info@labima.unifi.it

Check for updates here:

https://www.labima.unifi.it/vp-210-training-school-2nd-edition-12-14-july-2022.html