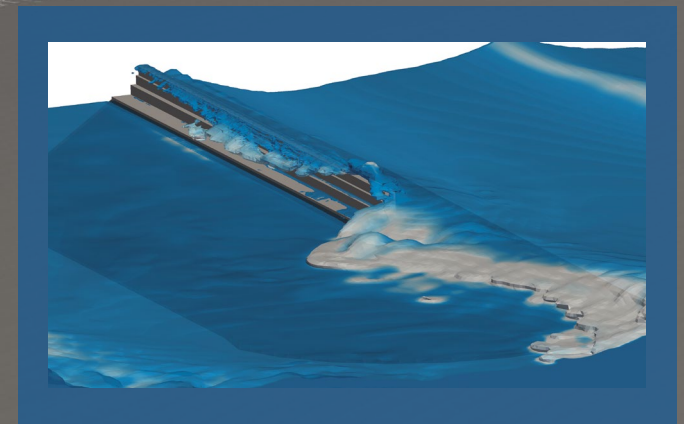




I H - F O A M
T r a i n i n g
c o u r s e



I H - F O A M

For more information and registration
visit: www.ihfoam.ihcantabria.com

IH Cantabria
Instituto de Hidráulica Ambiental de la Universidad de Cantabria
Parque Científico y Tecnológico de Cantabria, Parcela 13
39011 Santander

**IH cantabria**
INSTITUTO DE HIDRÁULICA AMBIENTAL
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IH-FOAM is based on OpenFOAM®.

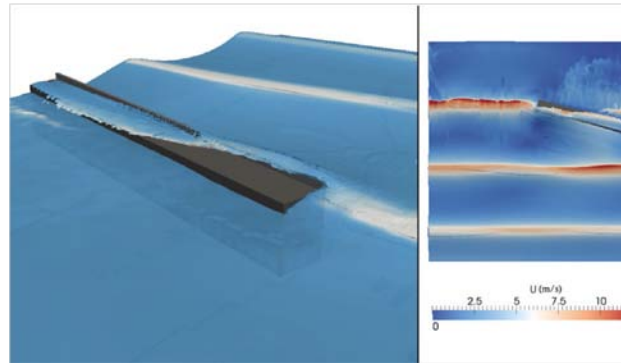
It solves the three-dimensional Reynolds- Averaged Navier-Stokes (RANS) equations for two incompressible phases using a finite volume discretization and the Volume Of Fluid (VOF) method. Turbulence can be modeled using several models: $k - \epsilon$, $k - \omega$ SST, LES...

IH-FOAM includes some of the most advanced features in the field, as specific boundary conditions for directional wave generation. 20 years of know-how have been applied to achieve, for example, accurate wave generation with a great number of theories, or second order interaction between irregular components. Active wave absorption is another advance. With this system no enlarging of the domain is needed, saving computational cost with respect to dissipative zones.

An extensive validation for a number of coastal engineering processes is currently in press for publication in Coastal Engineering.

Contents of the four-day course

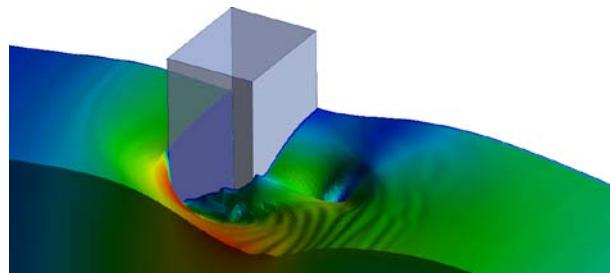
- Introduction to coastal engineering processes.
- Introduction to numerical modelling of waves and active wave absorption.
- Start –to-end methodology.
- Advanced mesh generation with OpenFOAM ® native tools.
- Applications to 2D and 3D processes:
 - Fluid structure interaction
 - Wave generation and active wave absorption
 - Run up
- Visualize computed results using ParaView® and tailored postprocessing tools especially designed for coastal engineering applications.



Learning objectives

After completing the course you will be able to:

- Set up, simulate and postprocess a large variety of cases.
- Simulate surf zone hydrodynamics processes and wave interaction with coastal structures including three-dimensional random sea states and considering conventional or non conventional impervious coastal structures.
- Analyse functionality and stability of coastal structures: wave reflection and transmission, wave run-up on coastal structures, wave dissipation, overtopping discharge, wave induced forces and moments.
- Visualize results using ParaView® and create videos of them.



What you get

- IH-FOAM source code
- A bootable USB-stick to work on your laptop during the course, at home or in your office.
- New three-dimensional wave generation and active wave absorption boundary conditions source code.
- Detailed step-by-step tutorials.
- Preprocessing tools.
- Universal postprocessing tools (Linux/Mac/Windows)
- A set of benchmark cases

Teaching staff

Iñigo J. Losada (Full Professor, IH Cantabria)

Javier L. Lara (Associate Professor, IH Cantabria)

Schedule, Booking and Course Details

The next course will be held at at Ferrovia Agroman UK, Chiswick High Road, London, between June 9th and 12th

The course will be delivered in English.

Registration fee (taxes not included):

Regular: 2.500 euros per attendant

Academia: 2.250 euro per attendant

Bonus for IH2VOF course (8th June) + IHFOAM course (9th-12th June): 3.000 euros per attendant

Disclaimer: This course is not approved or endorsed by ESI, the producer of the OpenFOAM® software and owner of the OpenFOAM® trademark.

More information and registration: ihfoam.ihcantabria.com

