

# INTERNATIONAL CENTER FOR NUMERICAL METHODS IN ENGINEERING



Generalitat  
de Catalunya

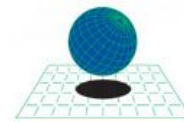


UNIVERSITAT POLITÈCNICA  
DE CATALUNYA

UNESCO



Centres de recerca  
de Catalunya



**CIMNE<sup>R</sup>**

## CIMNE Tecnología



Autonomous Company owned by  
CIMNE  
Created in 2011

International Center for Numerical  
Methods in Engineering

## Consortium



Government of Catalonia



Polytechnic University of Catalonia

Created in 1987 under the auspices of UNESCO



Technology Transfer

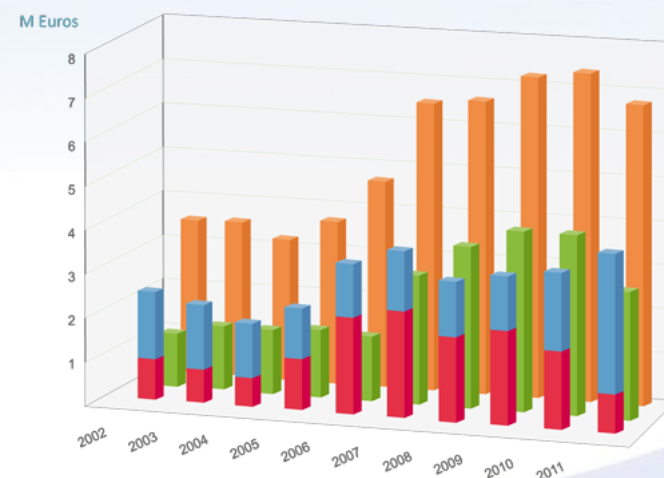
CIMNE ↔ Market

## Activities

- Training
- Research
- Technology Transfer



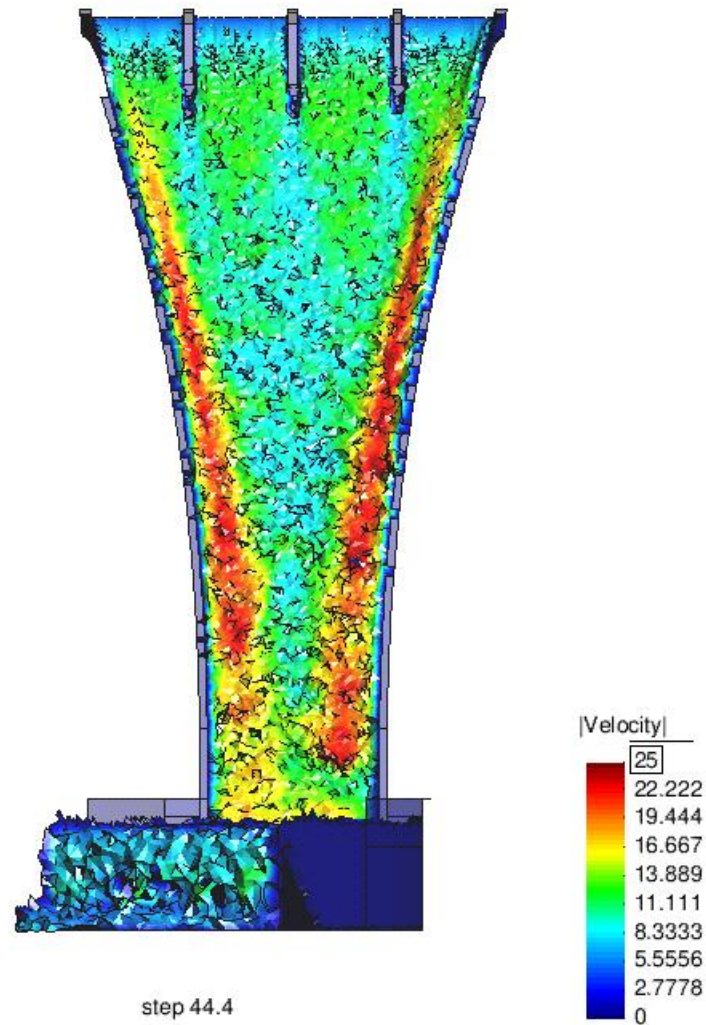
	2011	1987-2011
Courses and seminars	11	480
Congresses	17	110
Research Projects		
• European	11	177
• National	29	391
• Internacional	0	3
• With companies	71	919
• TOTAL	111	1.490
Publications		
• Books	7	130
• Monographs	8	193
• Technical Reports	39	995
• TOTAL	54	1.318
Creation of spin-off companies	1	4
Staff total		226
• Post-Doc		44
• Affiliated Professors (UPC)		14
• Researchers		92
• PhD. Students		42
• Services		34





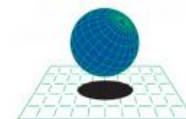
# Virtual Lab

## Example: Dam hydraulics

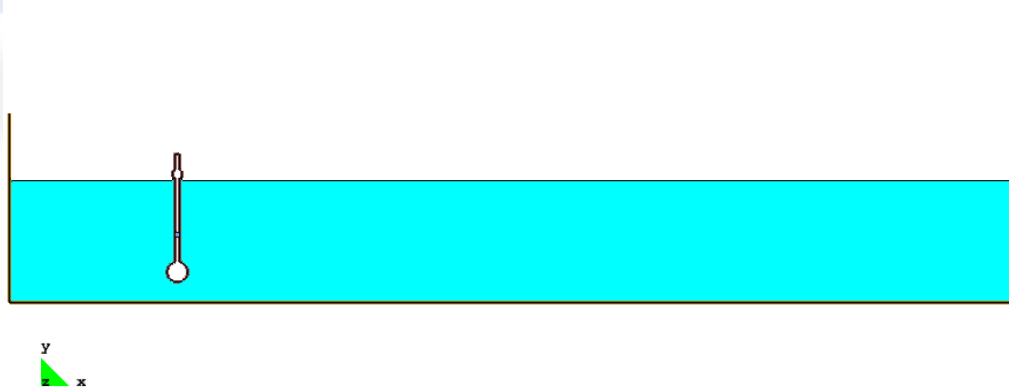
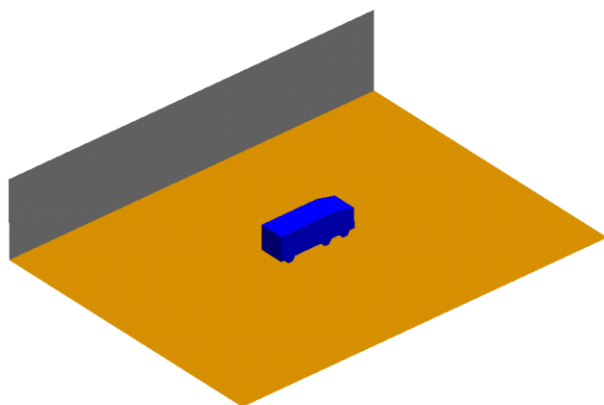
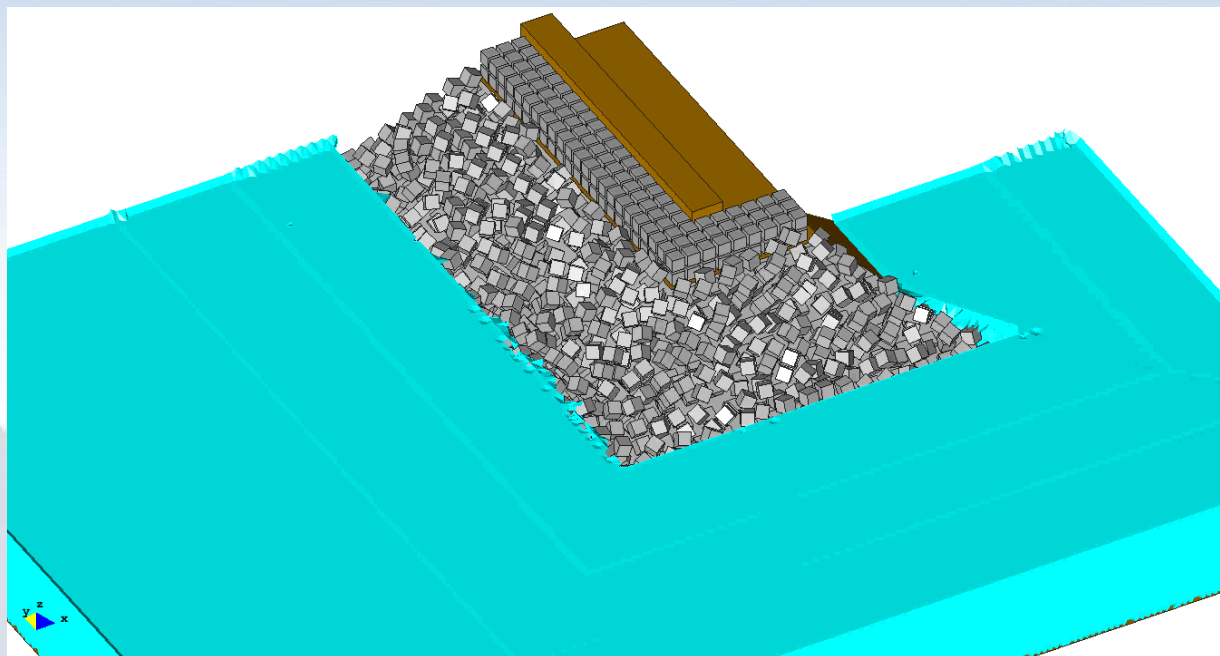


step 44.4

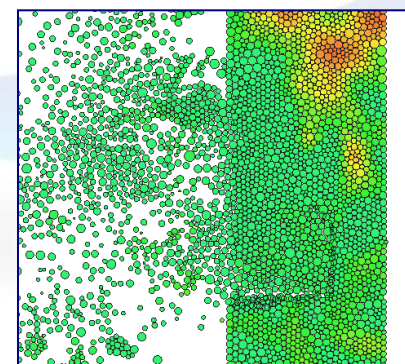
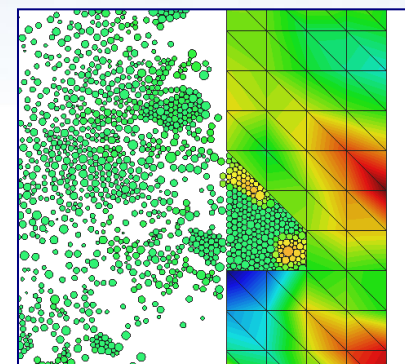
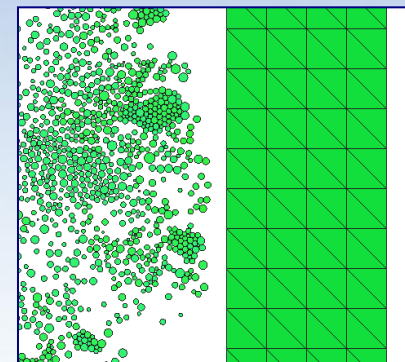
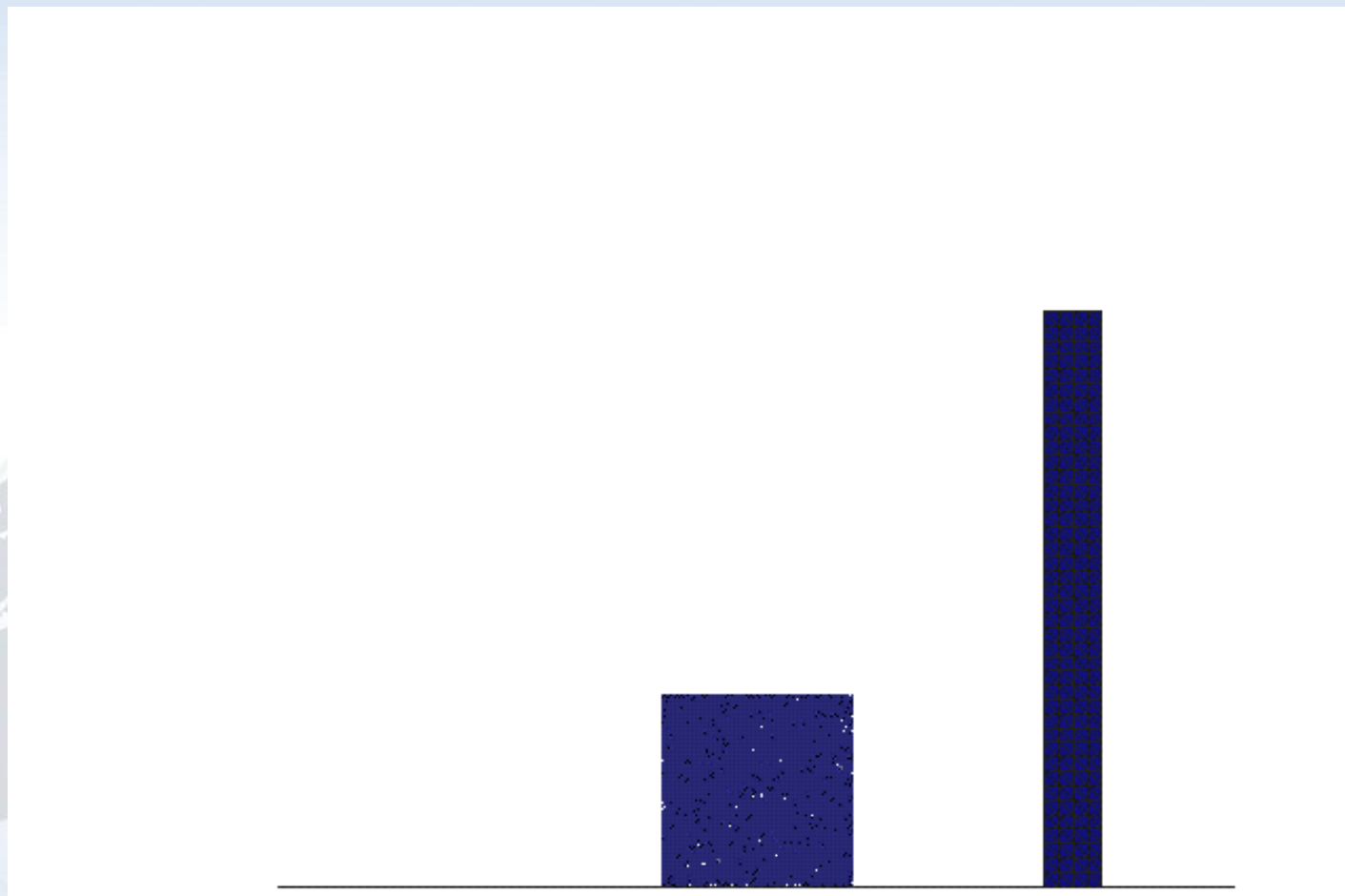
Contour Fill of Velocity, [Velocity].



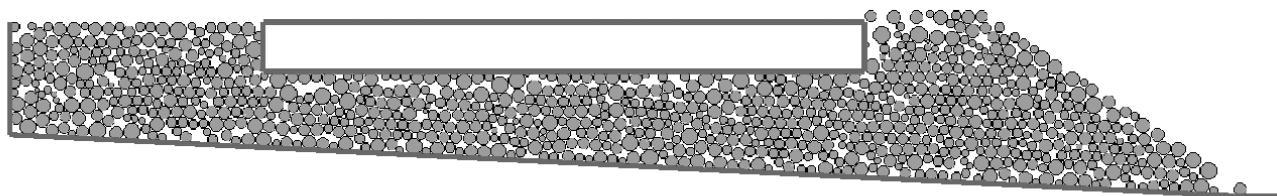
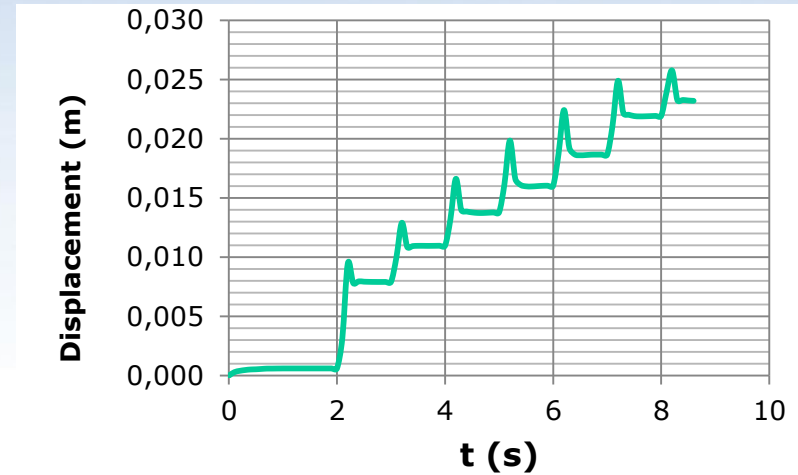
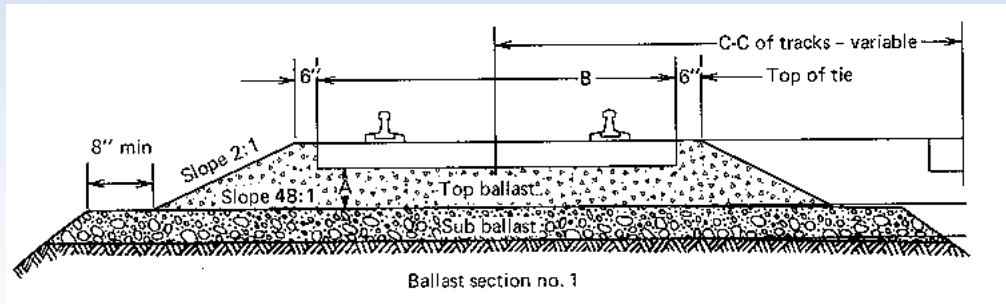
# Virtual Lab. Example: Harbour Engineering



# Explosions. Dynamic coupling DEM/FEM



# Ballast behaviour. Lateral resistance. Cyclic load



# Products & Companies



inergy  
RSM Gassó Cimne Energy, SL

Inergy's aim is to help clients save energy, reduce their energy bills and at the same time help mitigate climate change.

Since 2005, Inergy has offered solutions focusing on the combination of advanced engineering energy services and pioneered self-made software products.

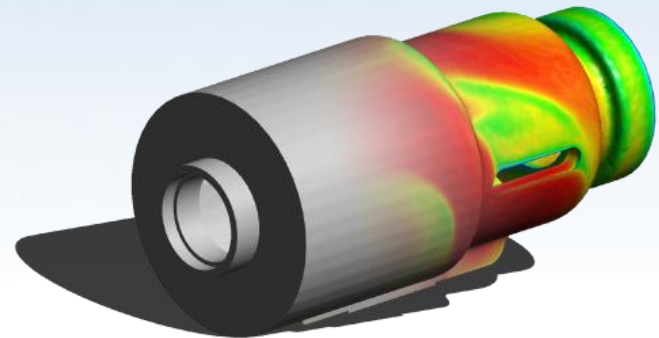
kWh	89.957.557,06	€	13.667.866,20	kgCO <sub>2</sub>	35.219.665,50
Energy saved		Amount saved in energy bills		CO <sub>2</sub> emissions reduced	

**Energy Accounting and Management System (SIE)**

All the information from your utility bills and energy consumption is organized, analyzed and always readily available.



**CLICK2CAST**



**Buildair**  
Engineering + Architecture



## CIMNE CHINA



**Sonia Sagristá**  
**[ssagrsta@cimne.upc.edu](mailto:ssagrsta@cimne.upc.edu)**

## Previous projects in China



**TCAiNMaND:**  
Tri Continental Alliance in Numerical  
Methods applied to Natural Disasters

### AEROCHINA II



Prospecting and promoting scientific cooperation between Europe and China in the field of multiphysics modelling, simulation, experimentation and design methods in aeronautics



### VKI-GRAIN Lecture Series

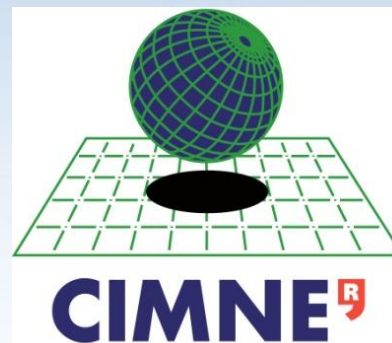
Advanced Methods and Tools for Reducing Environmental Impacts in Aeronautics Design for Aircraft and Aero-engines

**Thank you**



**[www.cimnetecnologia.com](http://www.cimnetecnologia.com)**

**[info@cimnetecnologia.com](mailto:info@cimnetecnologia.com)**



**[www.cimne.com](http://www.cimne.com)**

**[cimne@cimne.upc.edu](mailto:cimne@cimne.upc.edu)**

**Fernando Salazar**  
**[fsalazar@cimne.upc.edu](mailto:fsalazar@cimne.upc.edu)**