in a nutshell

Aula FNB CIMNE

Aula FNB-CIMNE

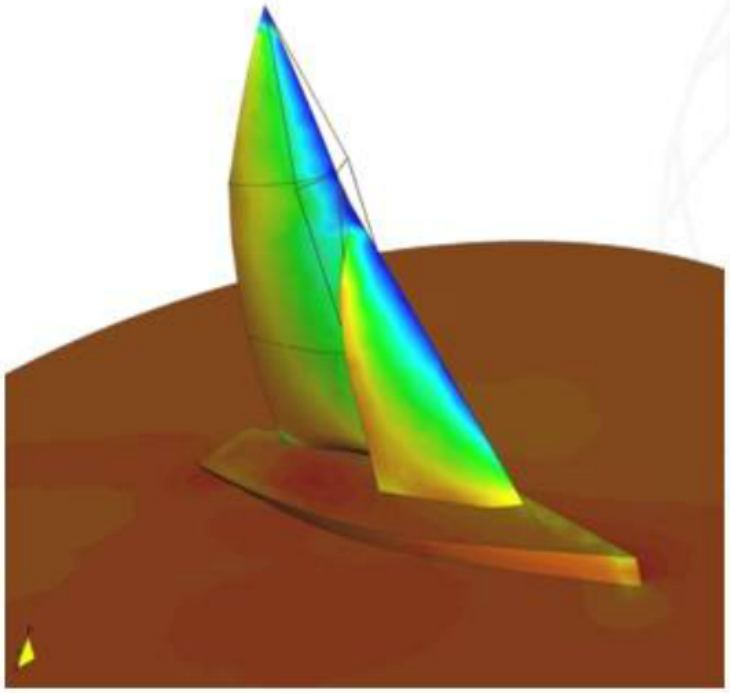
Aula FNB-CIMNE was created on 2002 through an agreement between the Faculty of Nautical Studies of Barcelona (FNB) and the International Center for Numerical Methods in Engineering (CIMNE) aiming to promote the development and application of computational methods for the solution of naval & maritime engineering problems.

Aula FNB-CIMNE

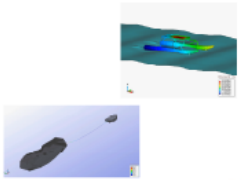
FACTS

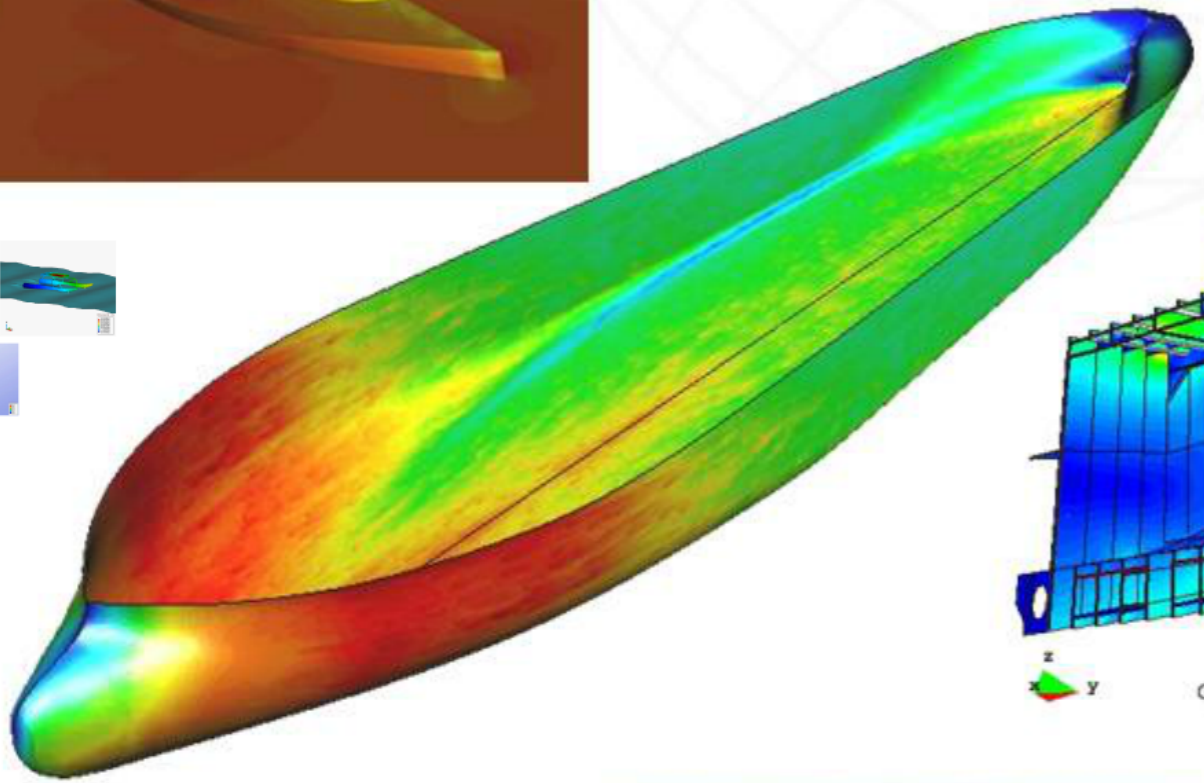
- Location: NT3 building of Barcelona Tech (FNB).
- Staff: 6 researchers (3 postdoctoral)
- In the last 10 years CIMNE N&M has taken part in over 30 RTD projects with over 50 companies and organizations
- More than 40 publications in international journals + more than 50 communications in congresses in the last 10 years
- CIMNE Awarded as the most relevant R&D organization in 2010 in the naval engineering field, by the Association of Naval Architects and Ocean Engineers of Spain
- 1 spin-off created: (Compass IS, http://www.compassis.com)
- Aula FNB-CIMNE is a member of the 'Aulas CIMNE Network Project'.

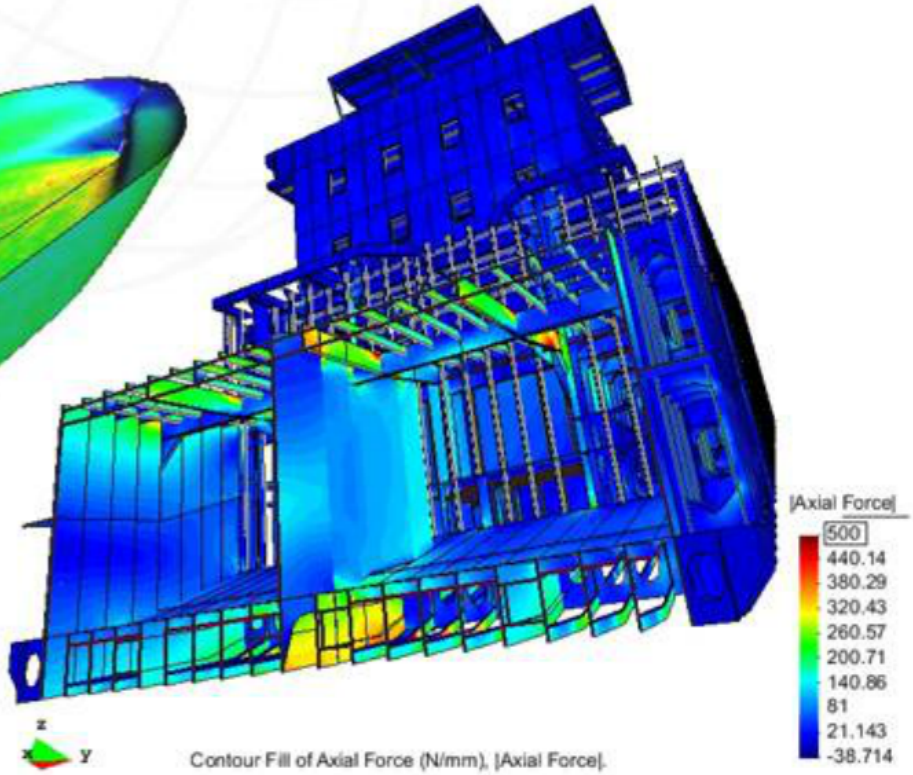
Naval architecture

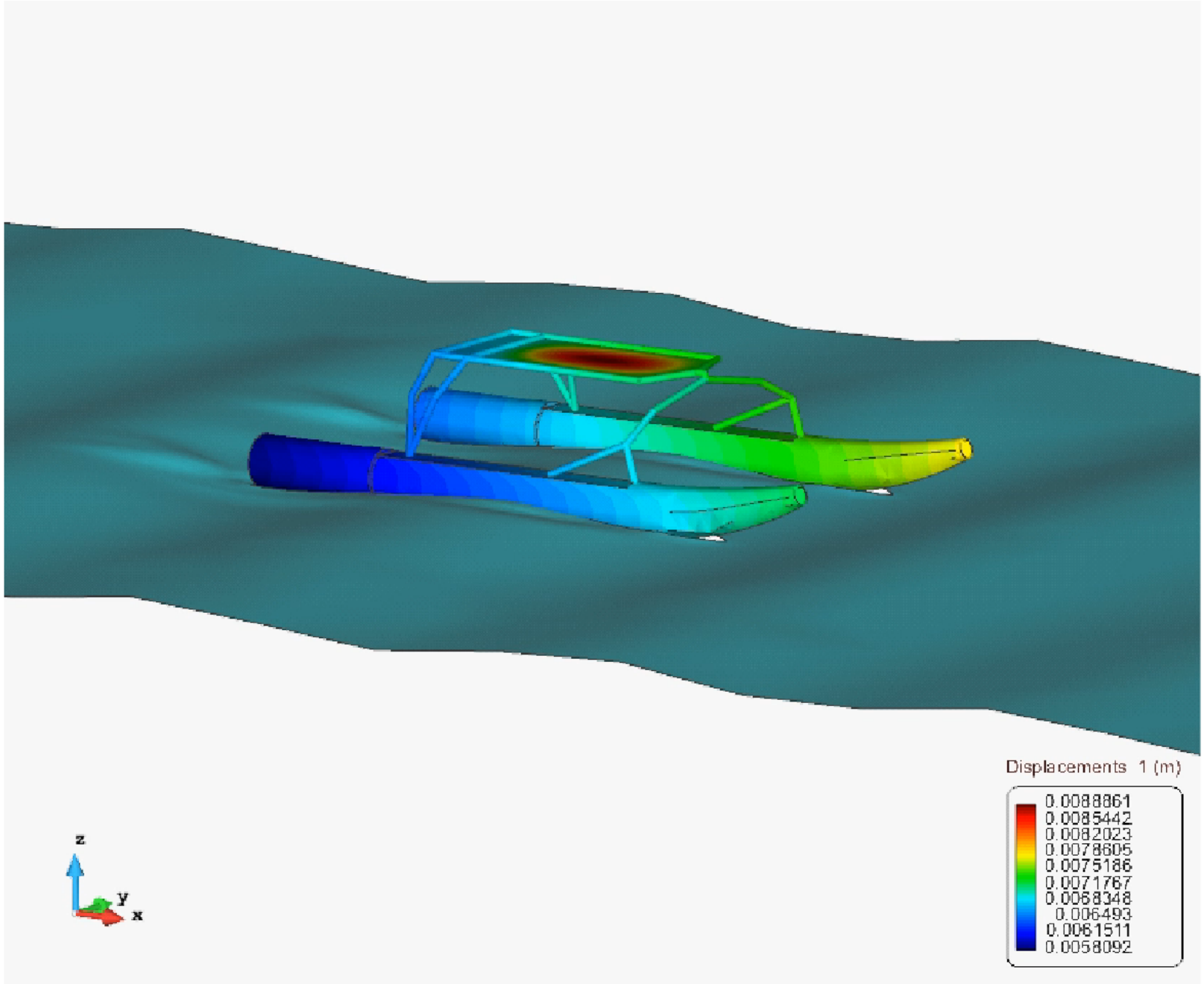


- Methods for hydrodynamics analysis of ships and optimization of shape hull design
- Seakeeping analysis and assessment of ships
- Calculation, design and assessment of naval structures
- Fatigue assessment of structures
- Methods for analysis of FRP naval structures
- Fluid-structure interaction methods: blast, sloshing, green waters, etc.





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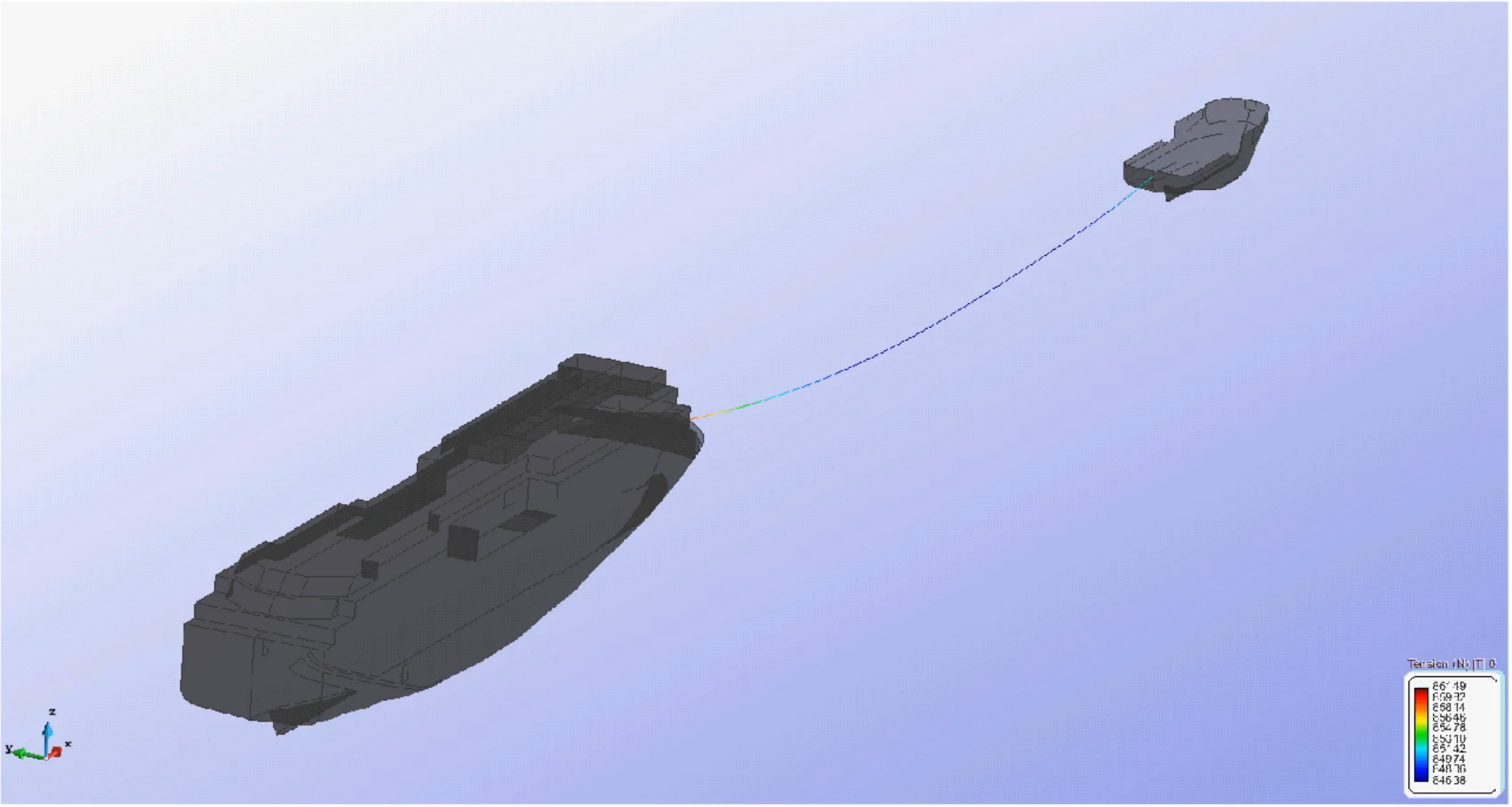
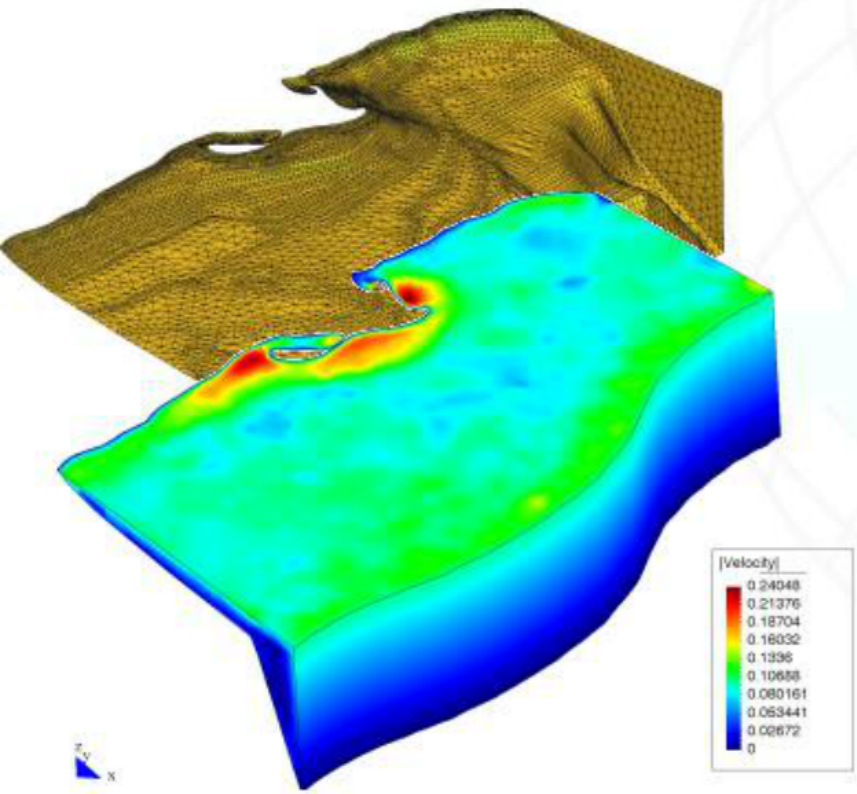
z
y
x

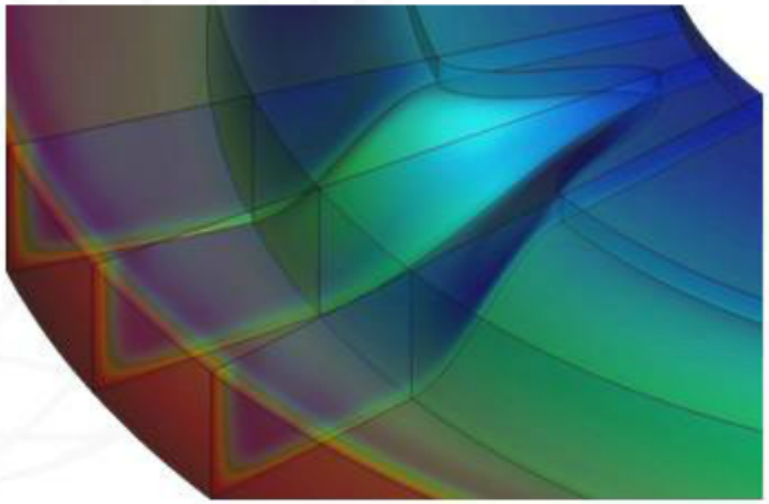
z
y
x

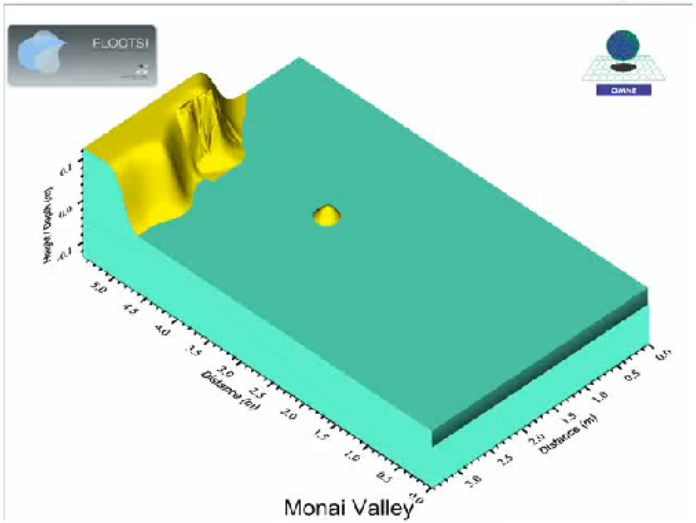

z
y
x

Oceanography

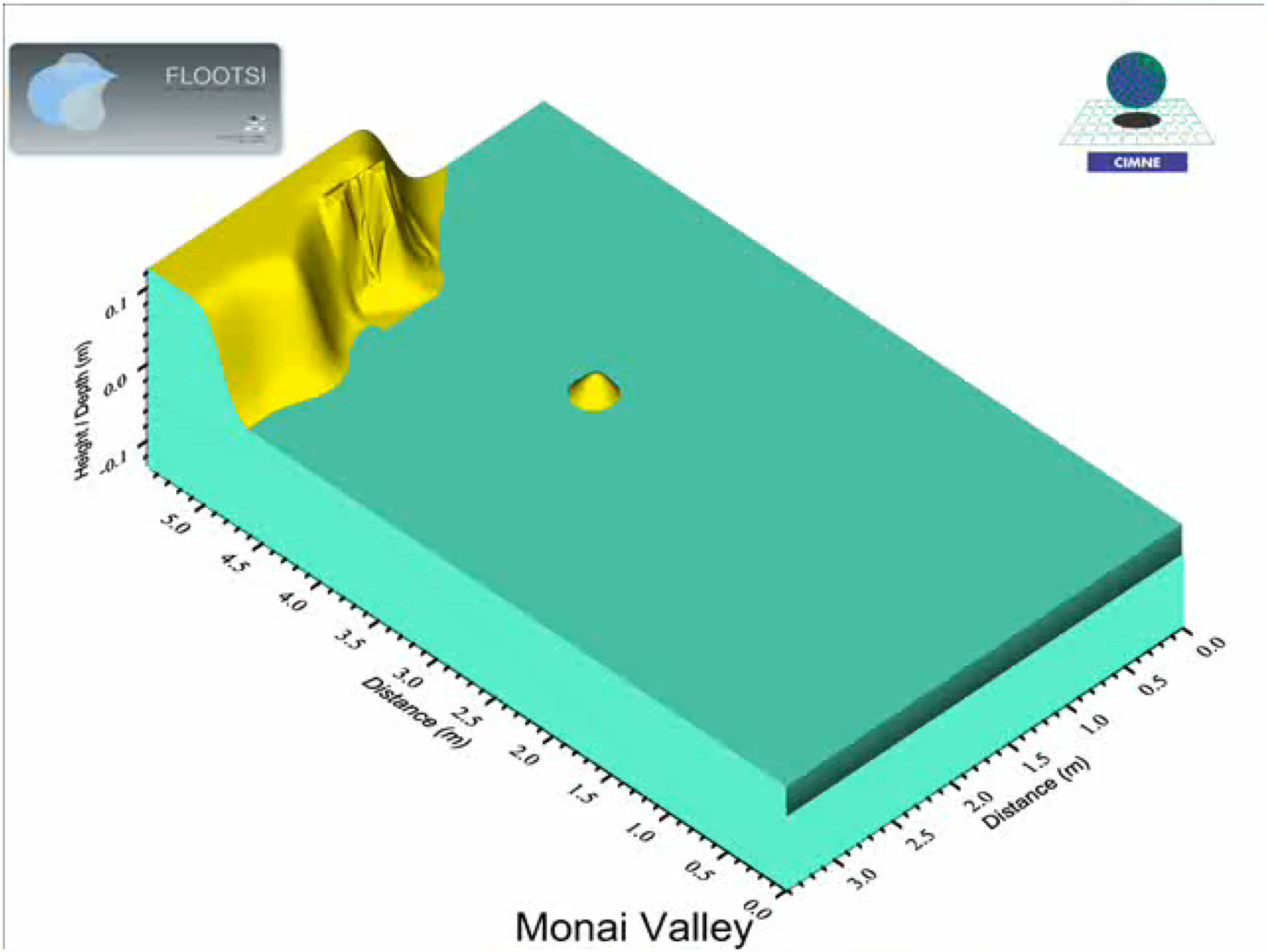


- Operational applications in oceanography.
- Analysis of environmental problems such as oil spills
- Development of models for simulation of tsunamis
- Numerical methods for multidisciplinary problems





Monai Valley


FLOOTSI
CIMNE
Height / Depth (m)
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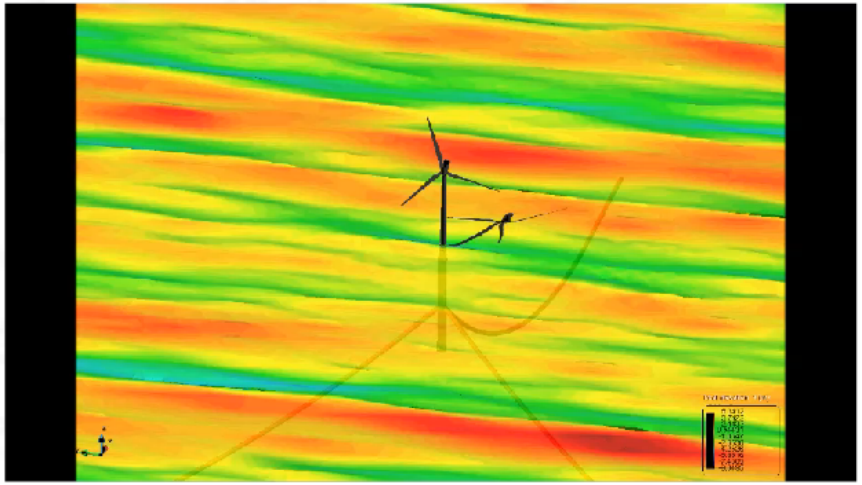
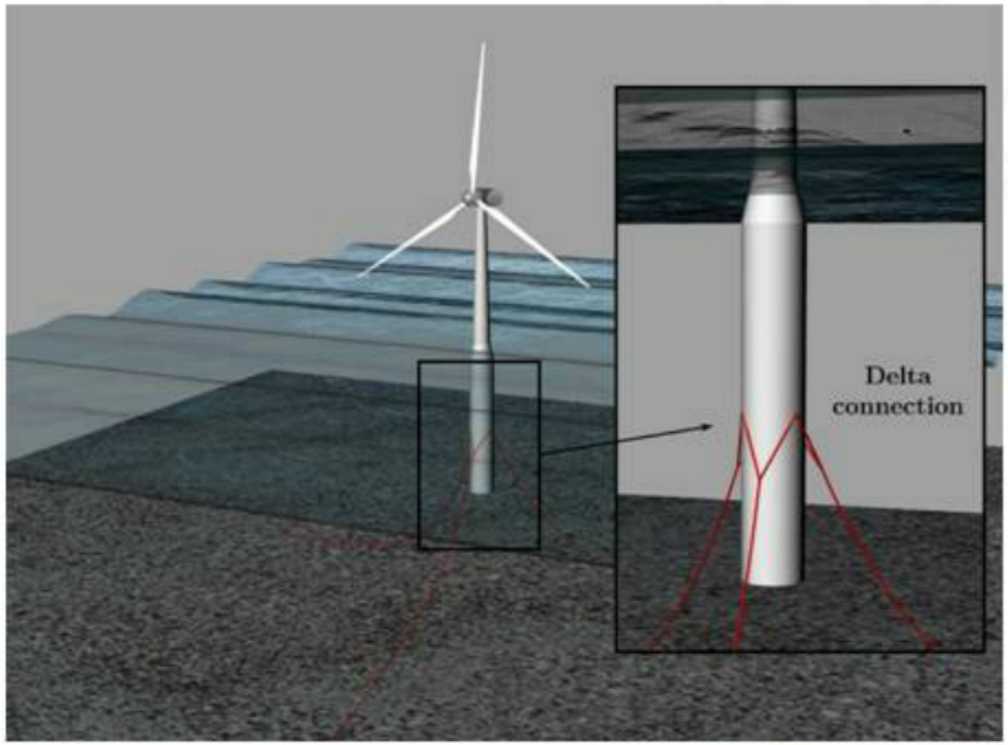
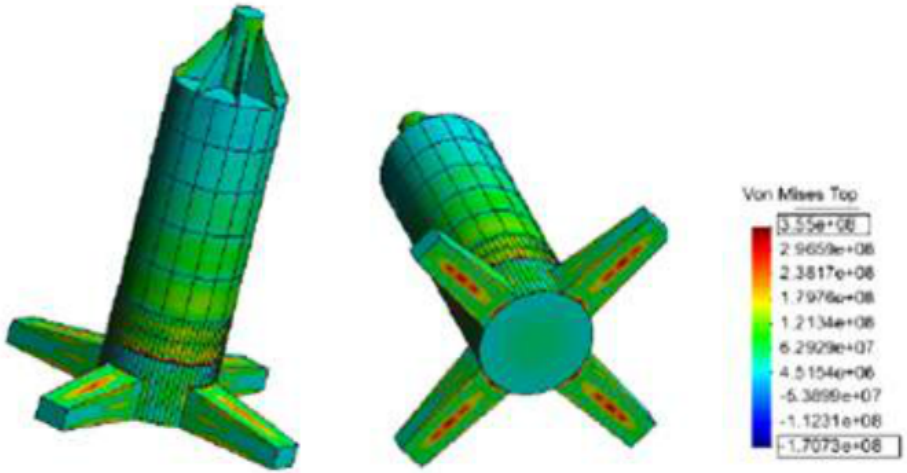
0.0
-0.1
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Distance (m)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Distance (m)
Monai Valley

Offshore wind energy

- Aerodynamics, hydrodynamics and structural assessment of offshore floating wind turbines
- Mooring design and assessment
- Fatigue assessment of floating wind turbines

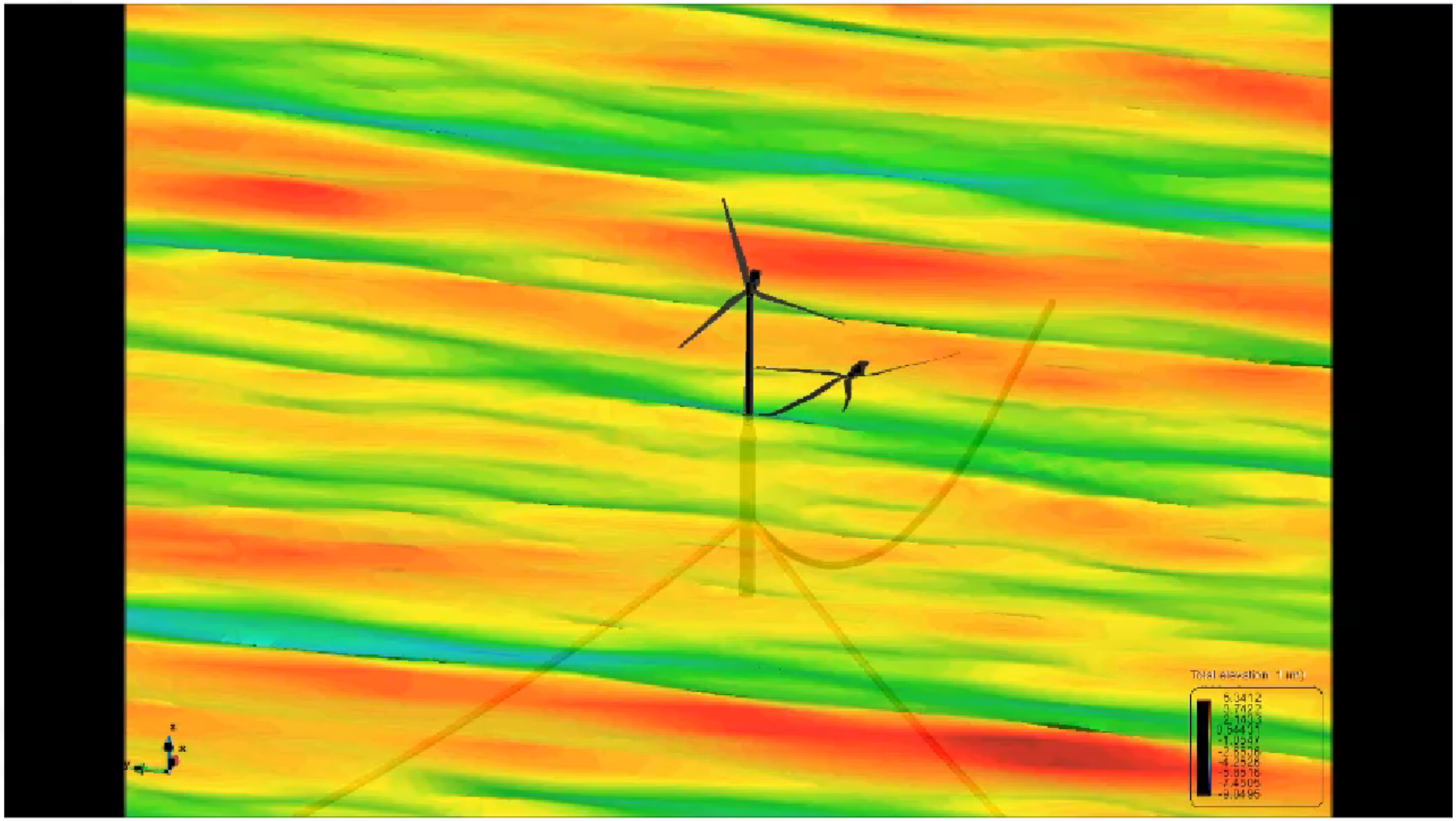


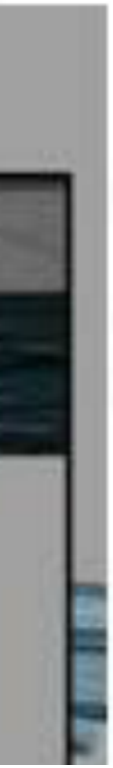




ing design and assessment

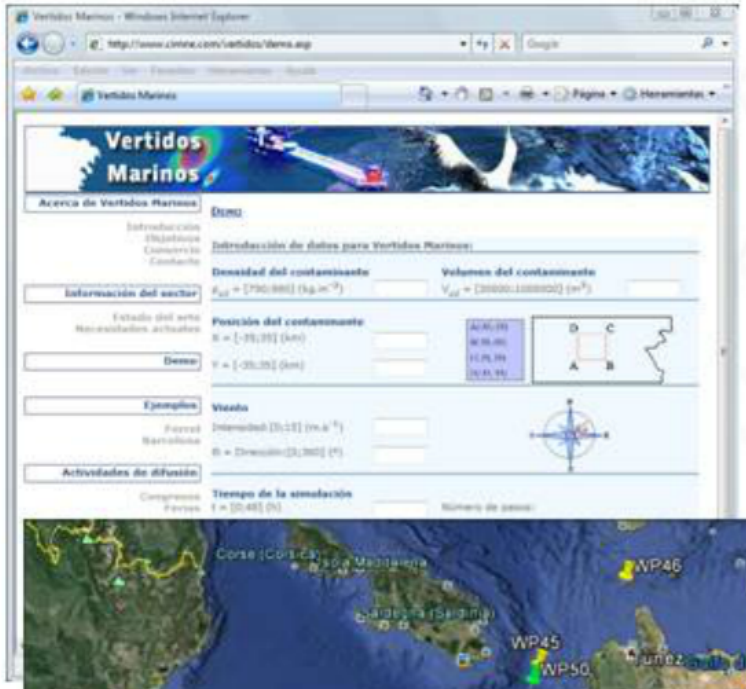
ue assessment of floating wind turbines

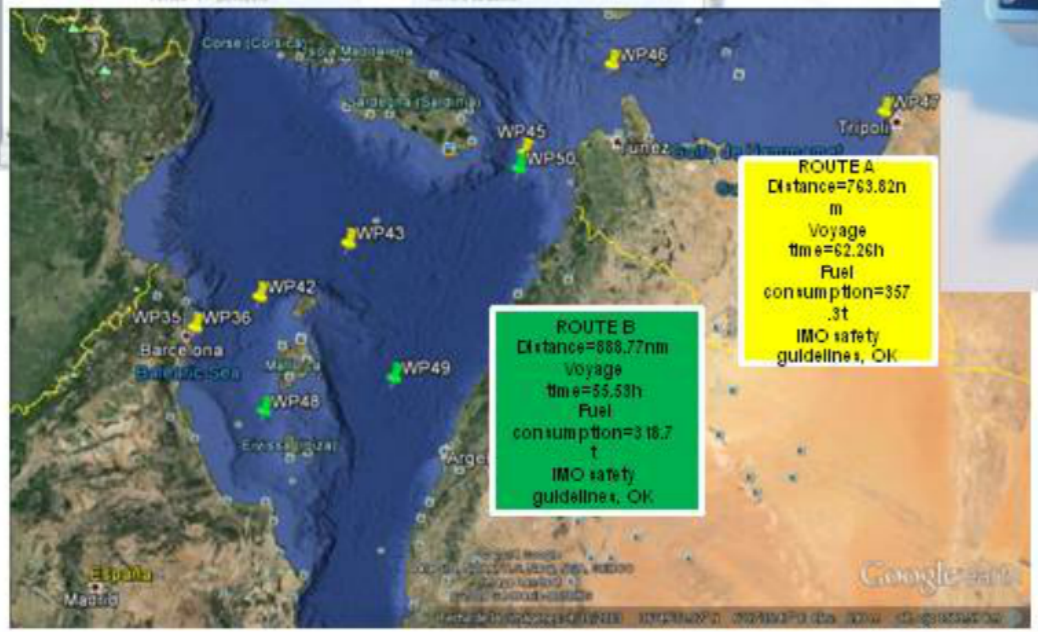


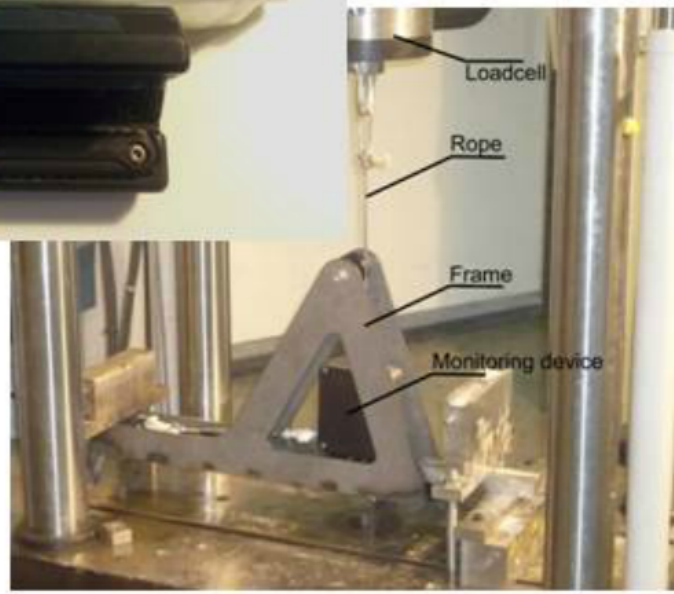


Monitoring and Decision Support systems

- Development of innovative monitoring devices
- Integration of monitoring devices and calculation tools
- Development of ITC services and Decision Support Systems

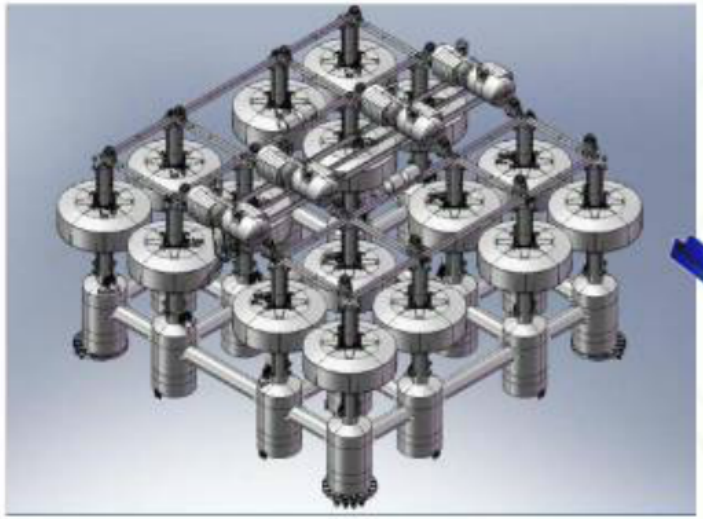


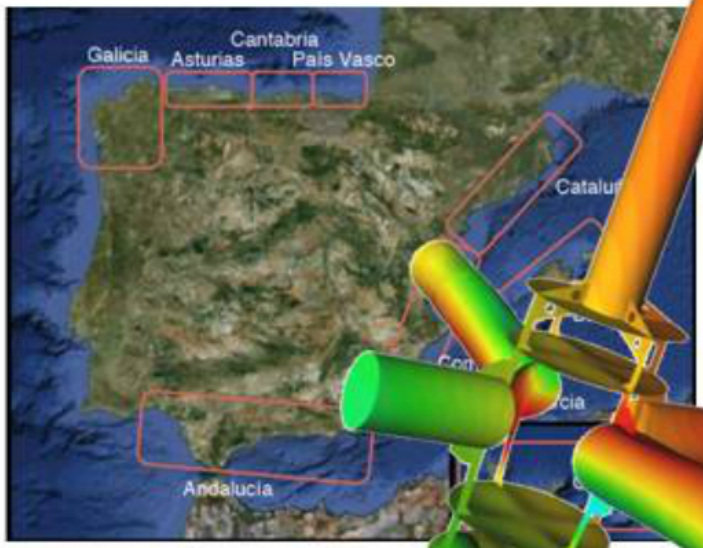


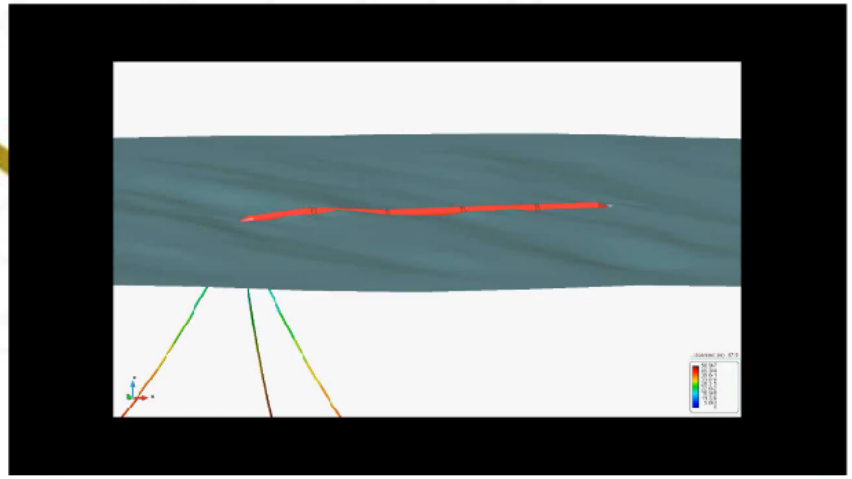


Ocean renewable energy sources

- Design, assessment and certification of wave energy generators
- Evaluation of energy resources
- Development of computational models for wave energy converters
- Structural design and assessment

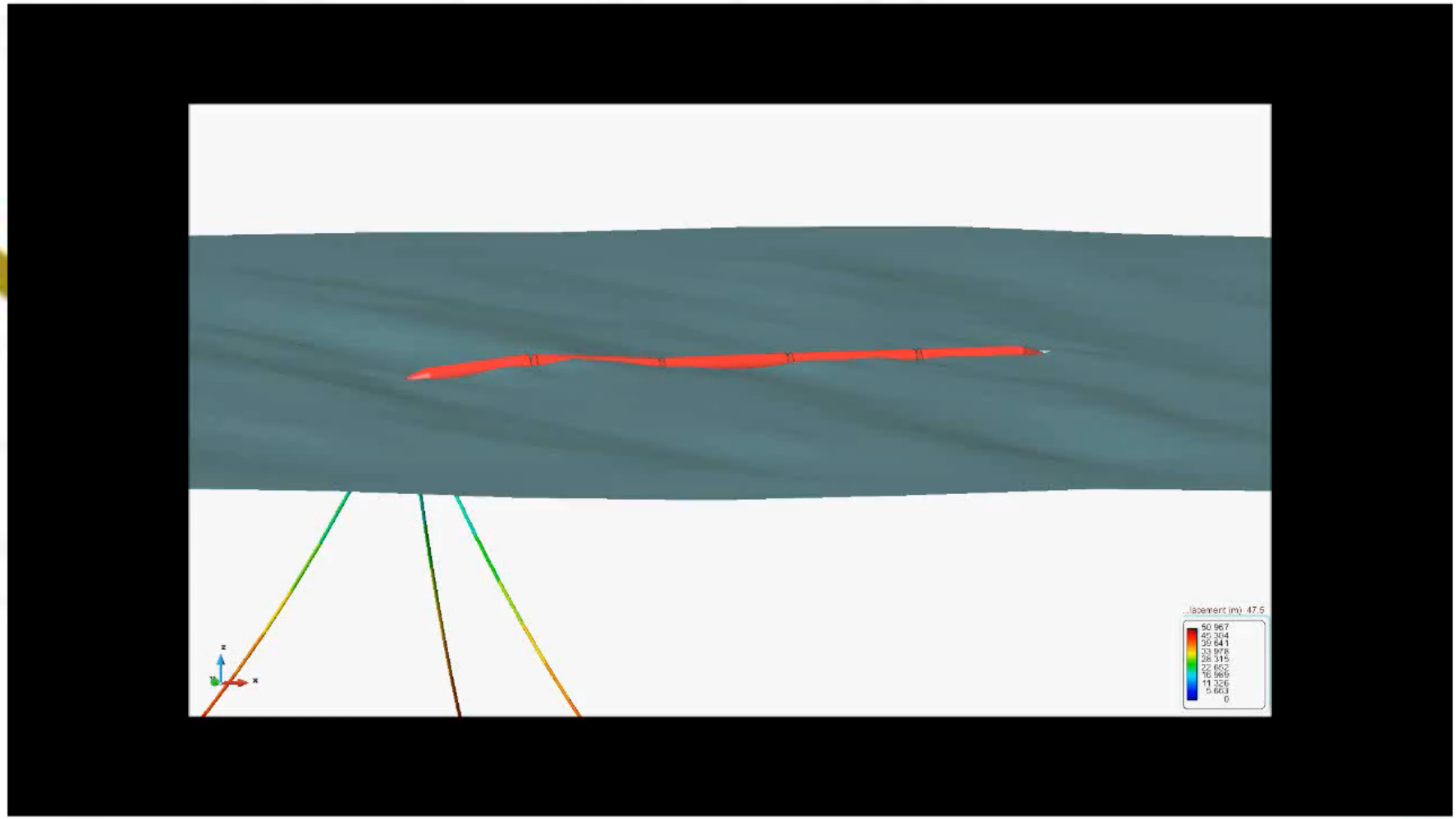


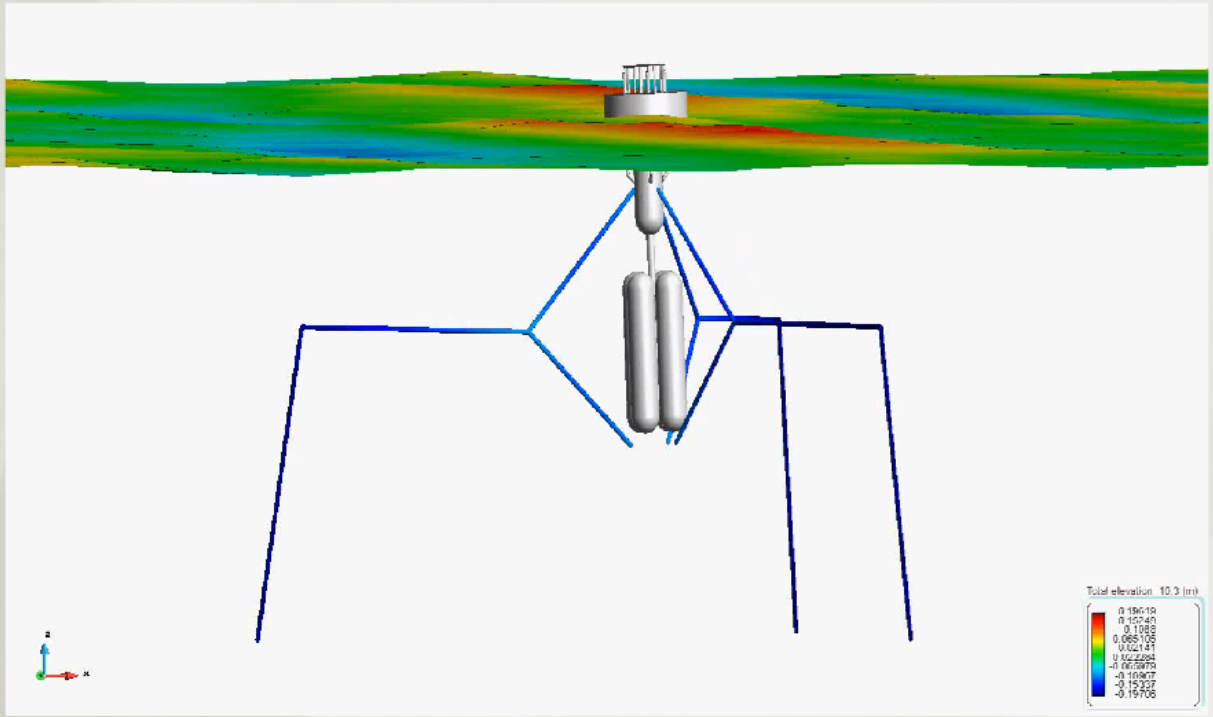




converters

ural design and assessment

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0.065105
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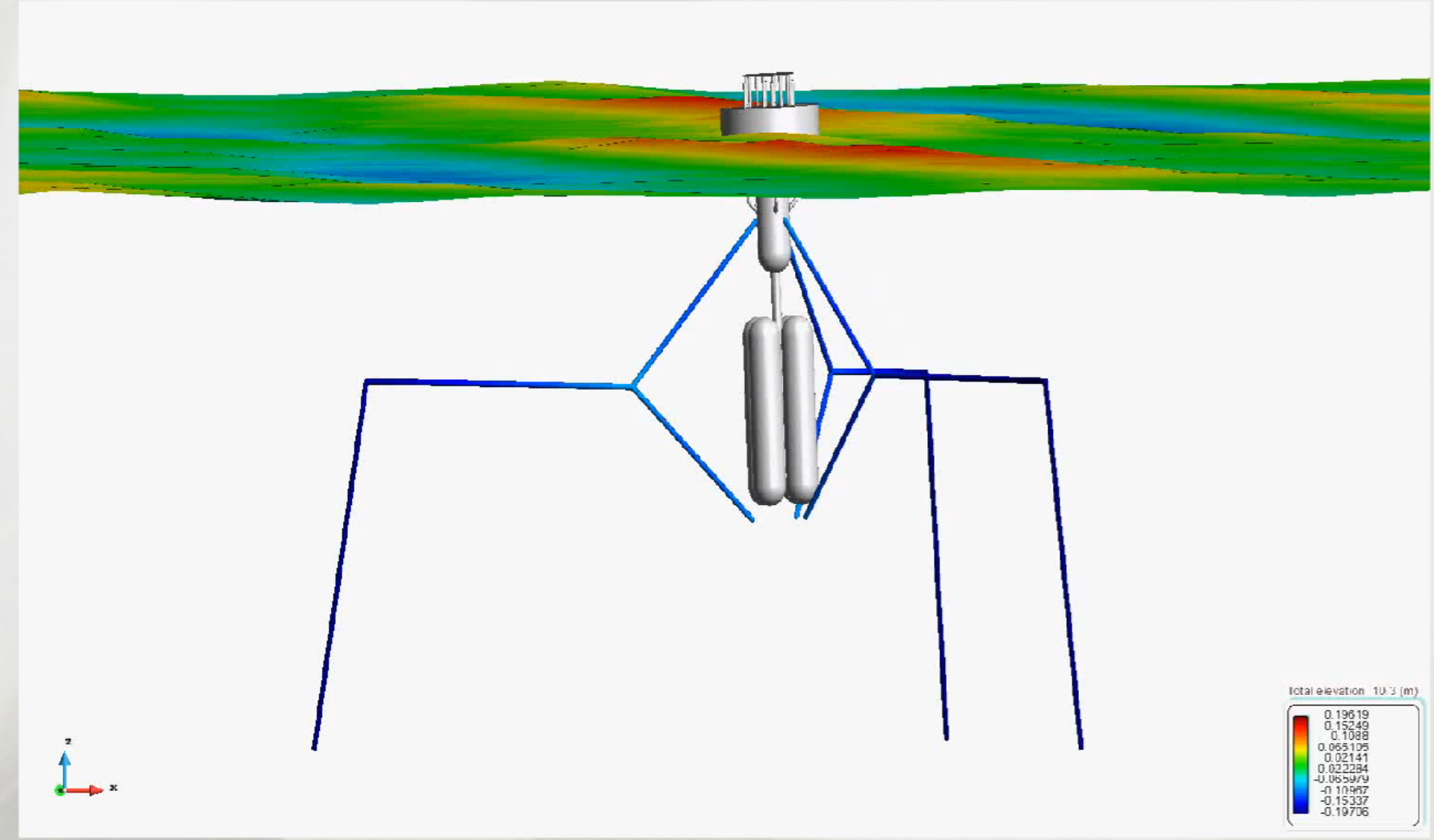
-0.19706


Total elevation 10.3 (m)
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-0.15337
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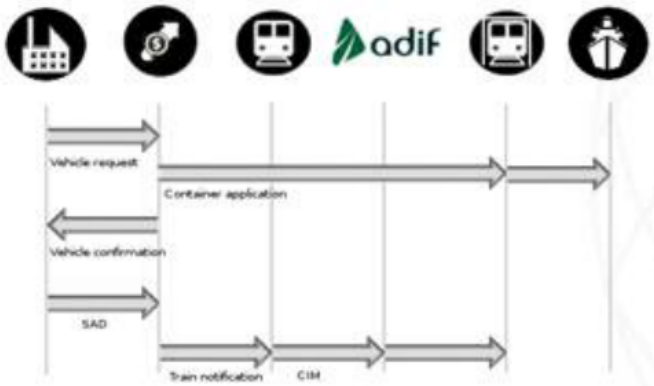
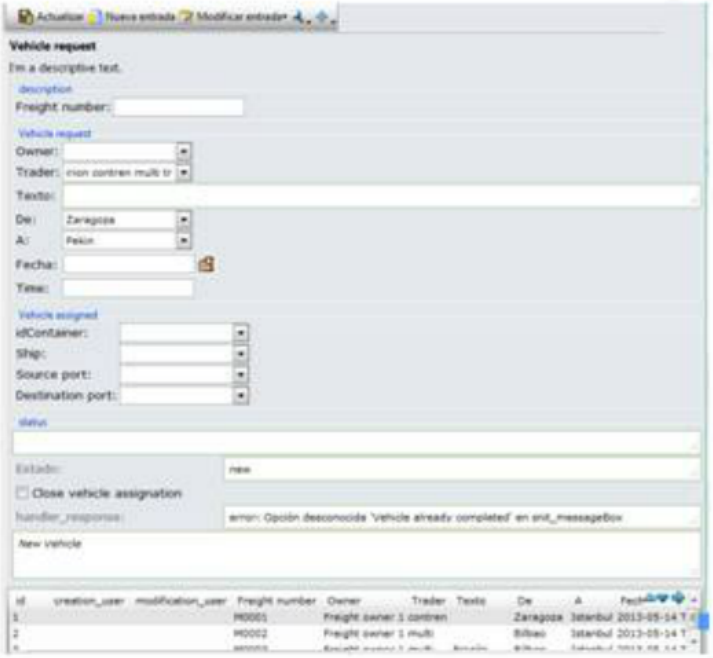
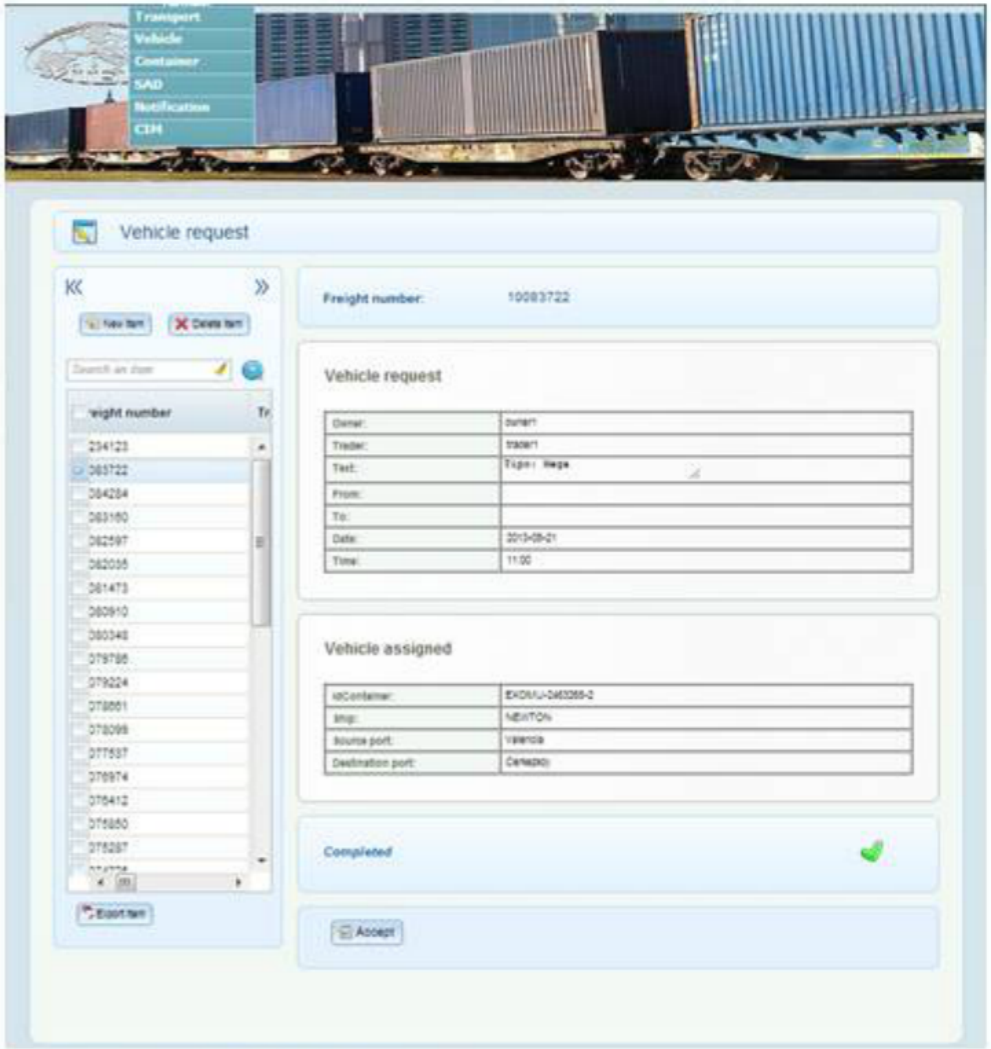
z
x

E-Logistics

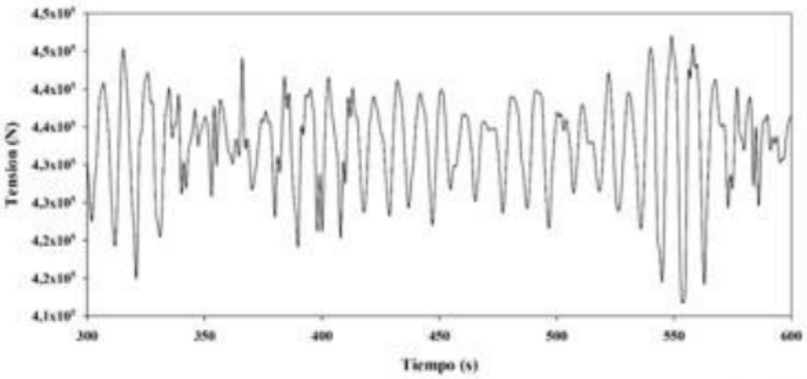
- Development of tools for Supply chain management
- Platforms for Business Process Management development
- Integration of ICT services in logistic chains



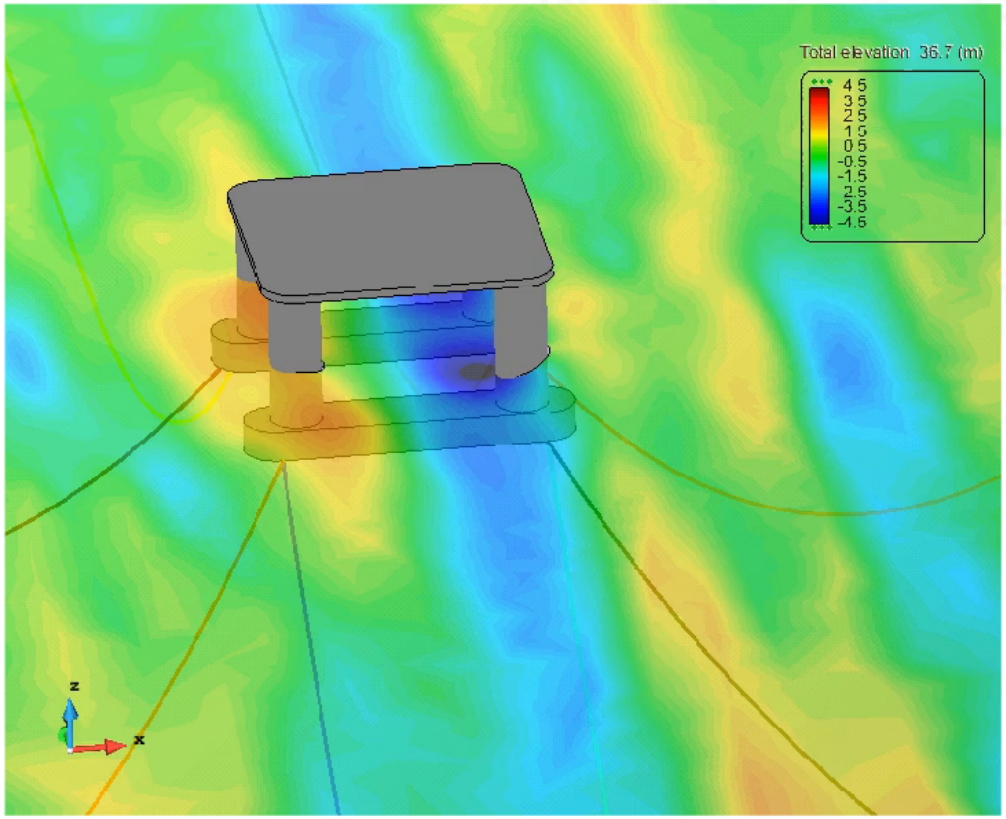




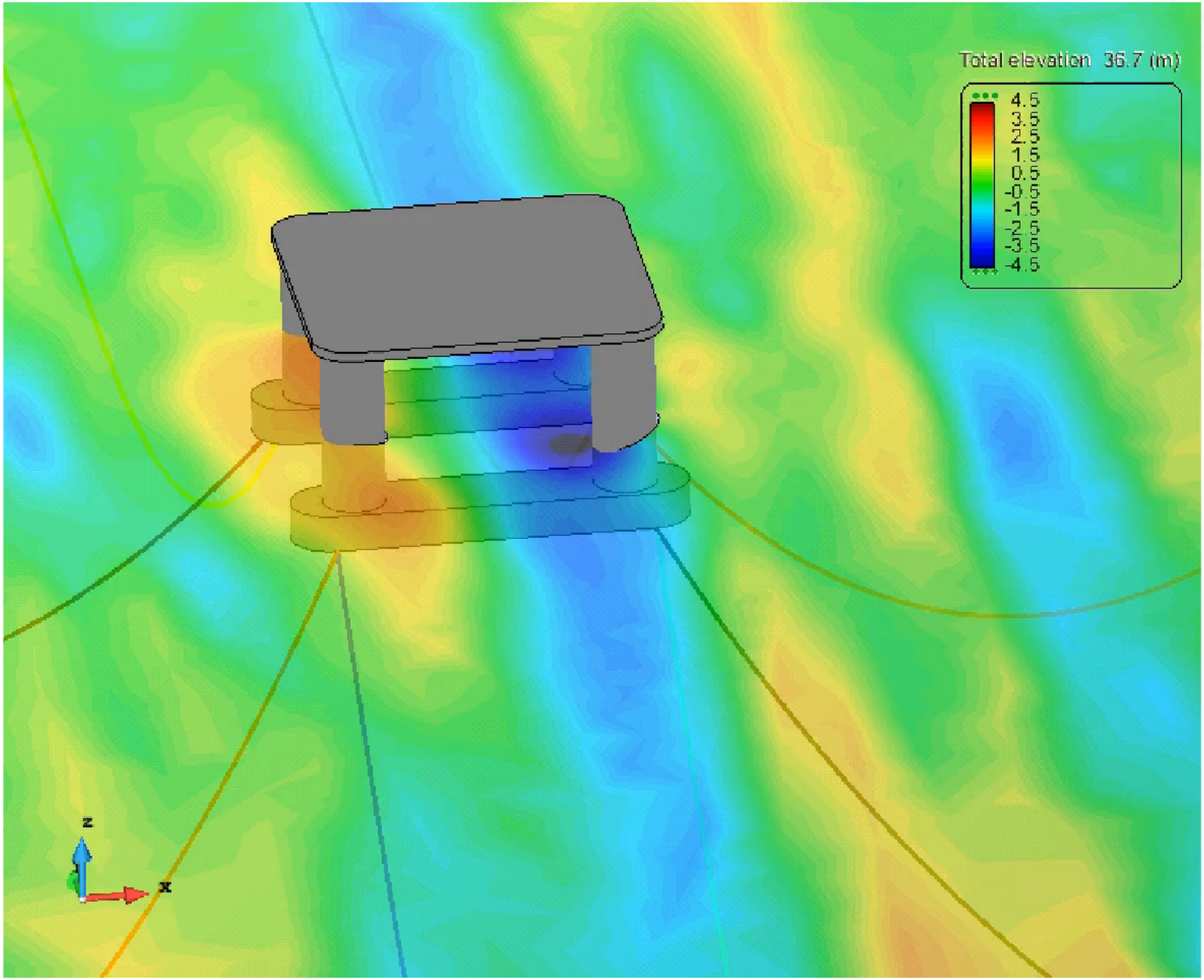
Ocean engineering

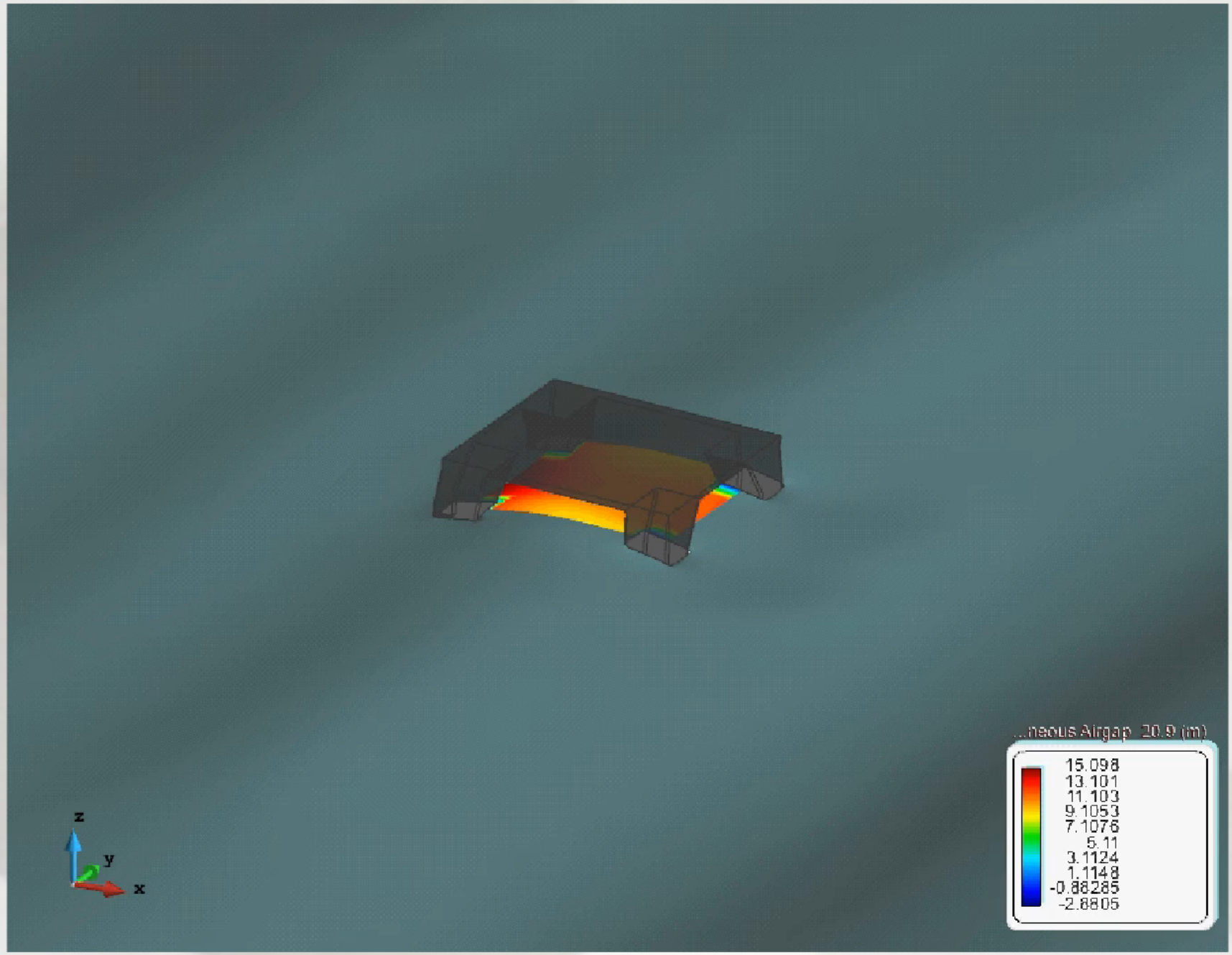


- Seakeeping analysis and assessment of offshore platforms (frequency and time domain)
- Airgap / slamming analysis of offshore platforms
- Analysis and assessment of mooring
- Models for fatigue assessment of structures



Tiempo (s)

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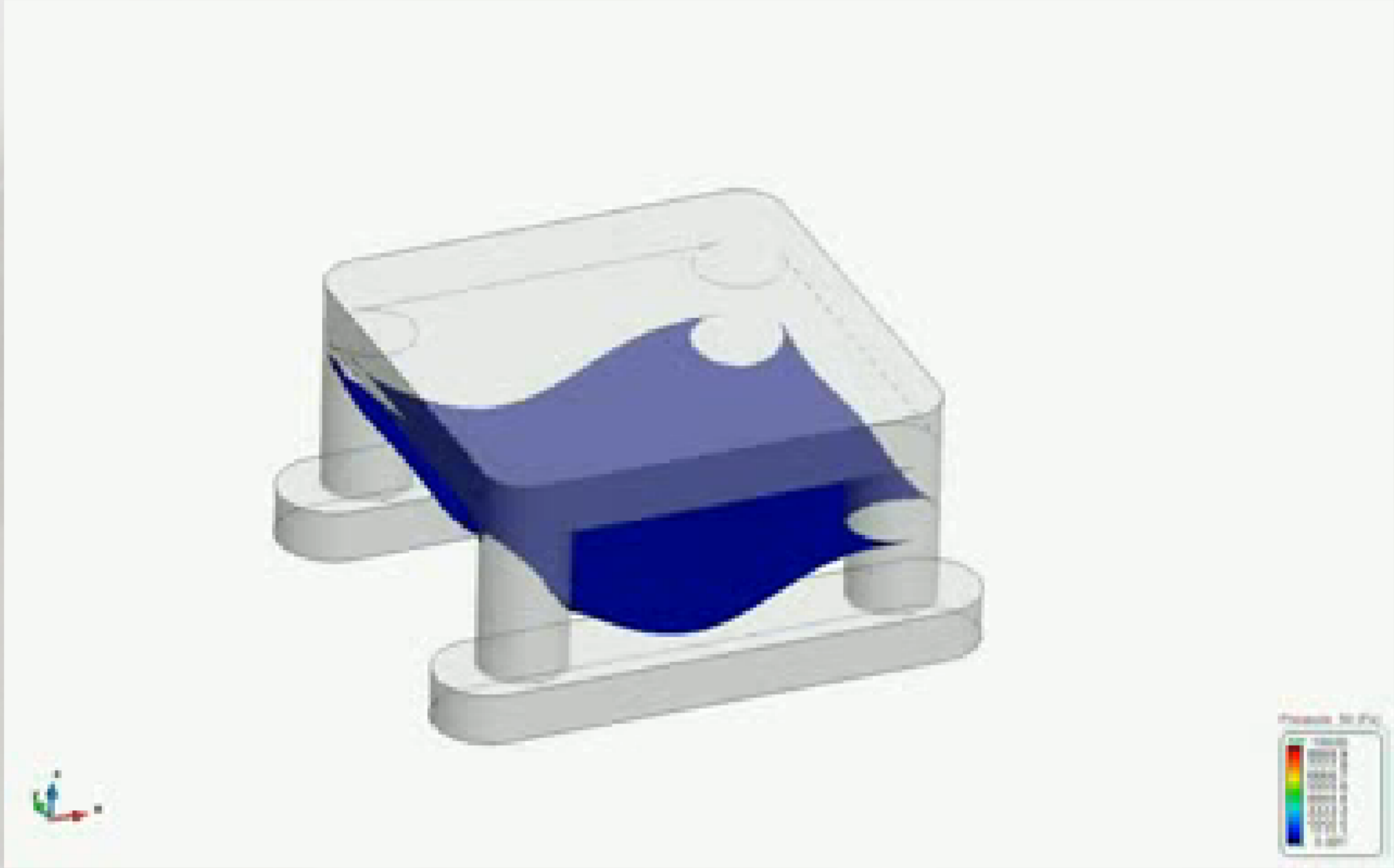
-2.8805
z
y
x



Some recent projects

- Advanced numerical simulation and performance evaluation of wave adaptive modular vessels in spray generating conditions (WAM-V). 2012-2015. ONR (US Navy grant).
- Securing the chain by intelligence at sea (Monalisa 2.0). 2013-2015. TEN-T agency.
- Development of a software environment for design and verification of marine wind turbines. 2010-2012. Iberdrola IC (contract).
- Multimodal interoperatibility e-services for Logistics and environmental sustainability (MIELE). 2010-2013. TEN-T agency.
- Development of computational models for evaluation and assessment of ocean energy converters. 2012-2014. Abengoa (contract).
- Evaluating performance of the air cushion and seals of a SES T-Craft in waves (M-SES). 2009-2012. ONR (US Navy grant).
- Development of a methodology for optimization and assessment of floating wind turbine platforms. 2013. Repsol (contract)
- Offshore Test Station. 2012-2014. KIC Inno-Energy project.

in a nutshell

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