

Empowering Electricity from the Ocean: A Marie Curie Fellow Testimony

JULIA FERNÁNDEZ CHOZAS



Who am I?

BEST Course: Alternative fuels for shipping (Norway)

Erasmus Student at LTH
(Lund, Sweden)

Wavetrain2 - Marie Curie Actions
FP7 (Copenhagen)

BEST Engineer Competition
(Estonia)



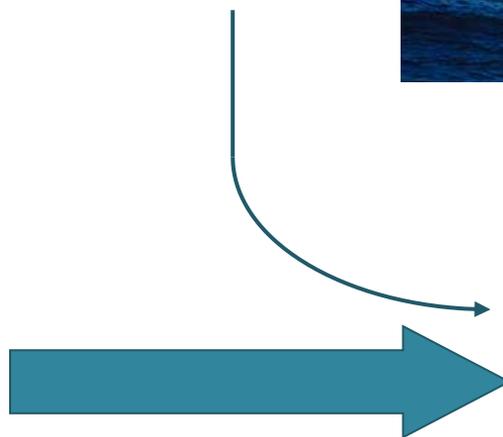
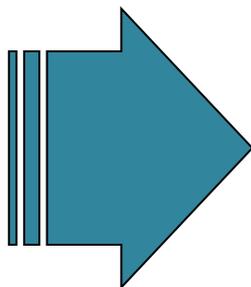
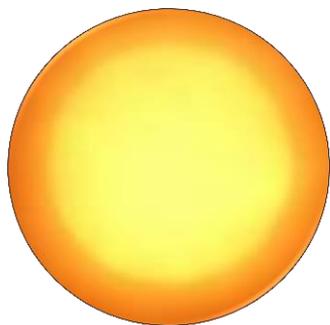
wavetrain2

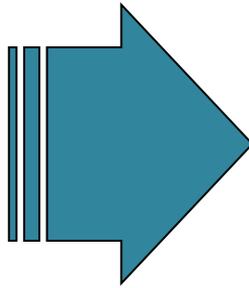
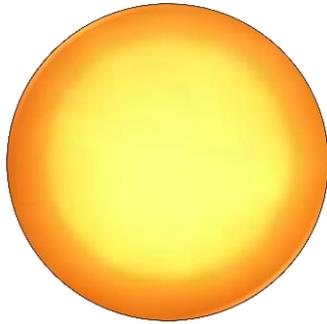
BEST Course: Passive Houses
(Slovenia)

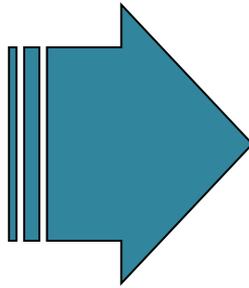
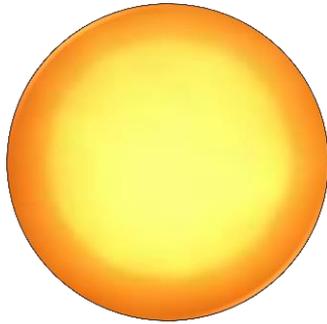
Electrical Engineering at Polytechnic University of Madrid – (Madrid, Spain)
Master Thesis: “An overview of wave energy for electricity generation”



wavetrain2



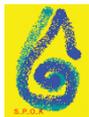




Multi-Disciplinary Training



22 young researchers



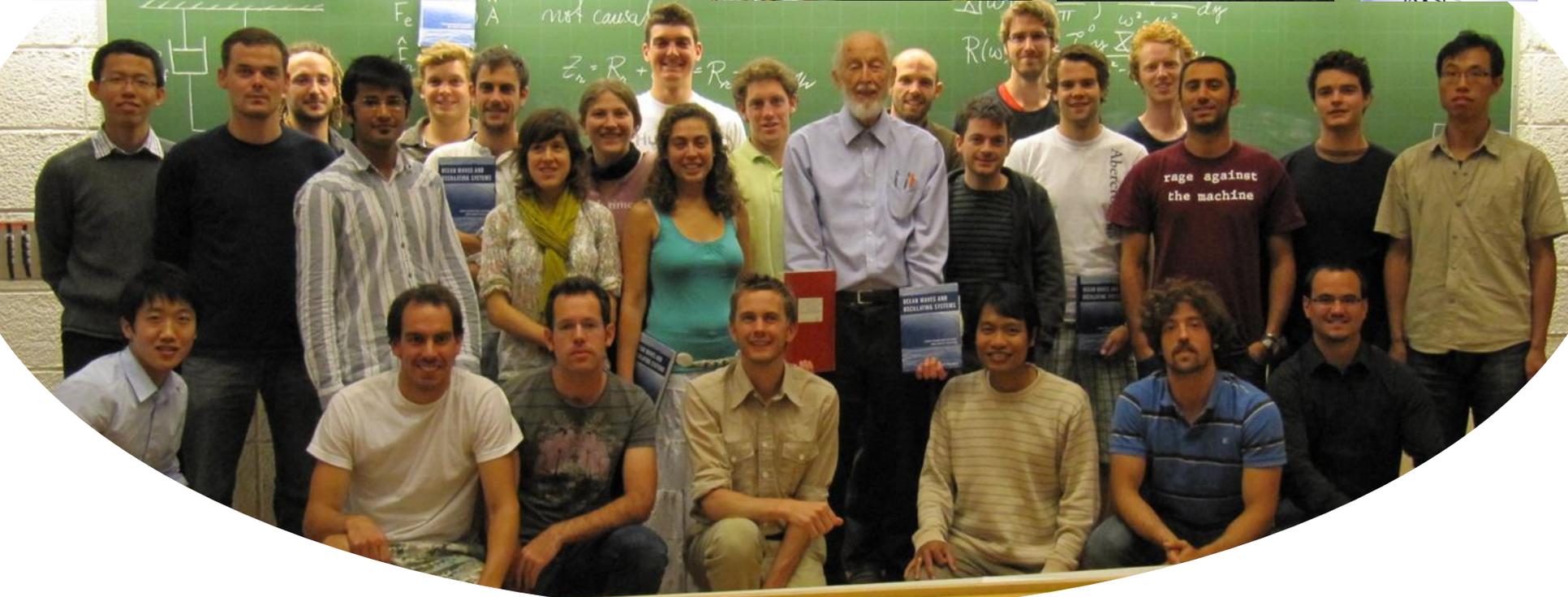
Multi-Disciplinary Training



22 young researchers



Research Through Generations



A family



A dream come true



Pico



Sea Gen



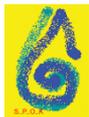
OE Buoy



Wavestar



Wavegen

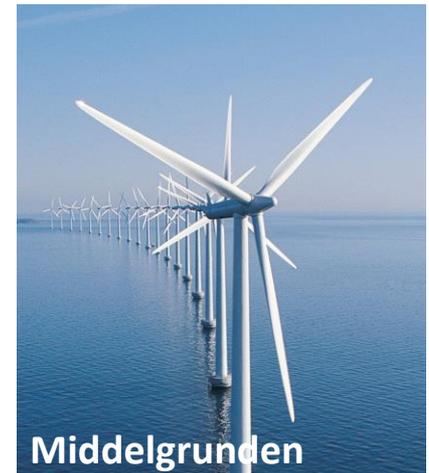
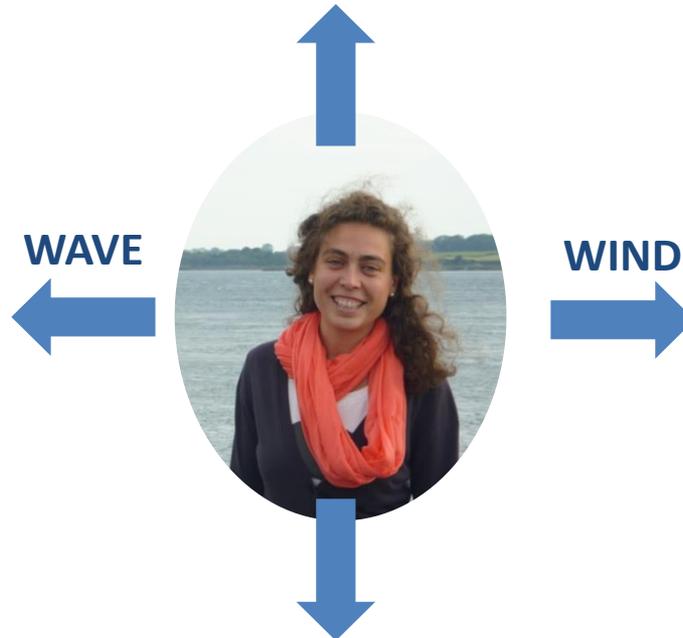


A success for my career

Innovative results for Europe's energy sector



CONSULTANCY COMPANY

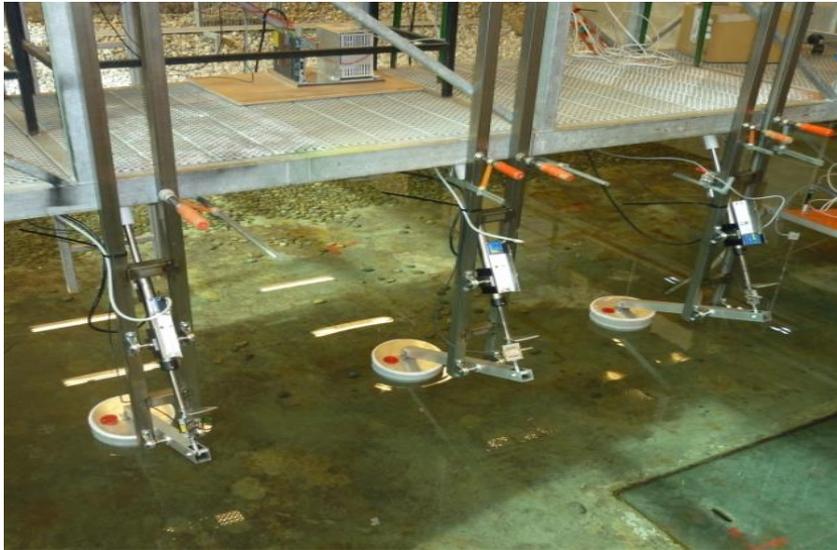


GRID OPERATOR
ENERGINET/DK



A PhD Opportunity

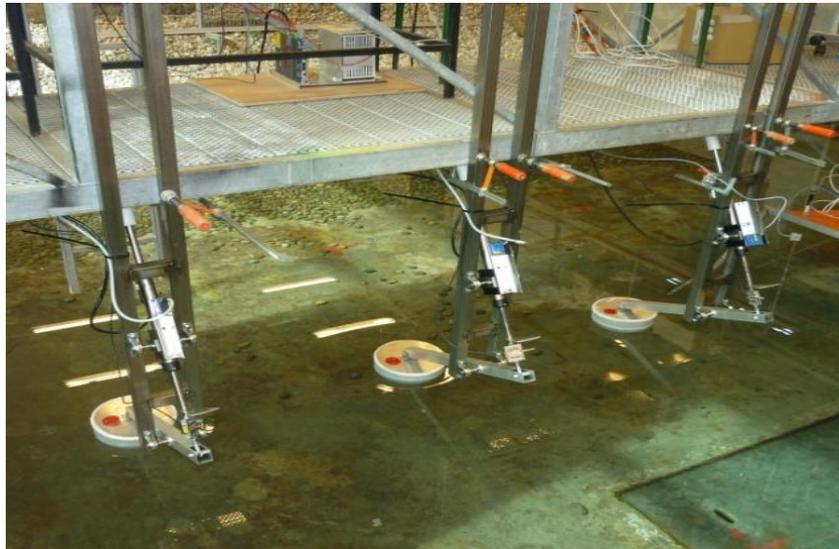
“Technical and non-technical issues towards the commercialization of wave energy converters”



- ❖ Aalborg University. Civil Engineering Depart.
- ❖ +30 years experience in Wave Energy

A PhD Opportunity

“Technical and non-technical issues towards the commercialization of wave energy converters”



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My work as a researcher

State of the Art of Wave Energy in Spain

J. Fernández Chozas* and H. C. Sørensen

Integration of Wave and Offshore Wind Energy in a European Offshore Grid

J. Fernández Chozas
Spik ApS | Department Civil Engineering Aalborg University
Copenhagen, Aalborg, Denmark
H. C. Sørensen
Spik ApS
Copenhagen, Denmark



3rd International Conference on Ocean Energy, 6 October, Bilbao

Toward Best Practices for Public Acceptability in Wave Energy: Whom, When and How to Address

Predictability of the Power Output of Three Wave Energy Technologies in the Danish North Sea

J. Fernández Chozas^{1,2}, N.E. Helstrup Jensen¹, H.C. Sørensen¹, J.P. Kofoed¹ and A. Kabath¹



Public Perception of Wave Energy

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by Julia Fernández Chozas

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At wave stage, it is no

Abstract: The integration of wave energy into the electricity market is a key challenge for the wave energy sector. In this paper, the state of the art of wave energy technologies in the Danish North Sea is reviewed. The paper focuses on the predictability of the power output of three wave energy technologies: the Wave Energy Converter (WEC), the Wave Energy Converter (WEC) and the Wave Energy Converter (WEC). The results show that the accuracy of the prediction is significantly higher for the WEC (25-200%) than for the other two technologies (10-20%).

Keywords: Sea, Handshaking, predictability.

State of the Art of Wave Energy in Spain

J. Fernández Chozas* and H. C. Sørensen



PREDICTABILITY and VARIABILITY of the POWER OUTPUT of SELECTED WAVE ENERGY TECHNOLOGIES in the NORTH SEA

MSc. Julia Fernández Chozas (PhD Student)



Abstract: Wave energy is one of the most promising renewable energy sources. However, the predictability and variability of the power output of wave energy technologies is a key challenge for the wave energy sector. In this paper, the state of the art of wave energy technologies in the North Sea is reviewed. The paper focuses on the predictability of the power output of three wave energy technologies: the Wave Energy Converter (WEC), the Wave Energy Converter (WEC) and the Wave Energy Converter (WEC). The results show that the accuracy of the prediction is significantly higher for the WEC (25-200%) than for the other two technologies (10-20%).

Keywords: Sea, Handshaking, predictability.

1. Introduction
 2. State of the Art
 3. Case Studies
 4. Conclusions

3 CASE STUDIES

- Columbia Energy Partners, Tillamook, Oregon
- Waven Dragon Energy, 500 Kintore
- Mutrikuri Pilot Plant, Spain

LESSON LEARNED

- Public opinion is a key factor in the success of wave energy projects.
- Early engagement with stakeholders is essential.
- Clear communication and transparency are crucial.

1st Poster Award - ICOE





Pelamis



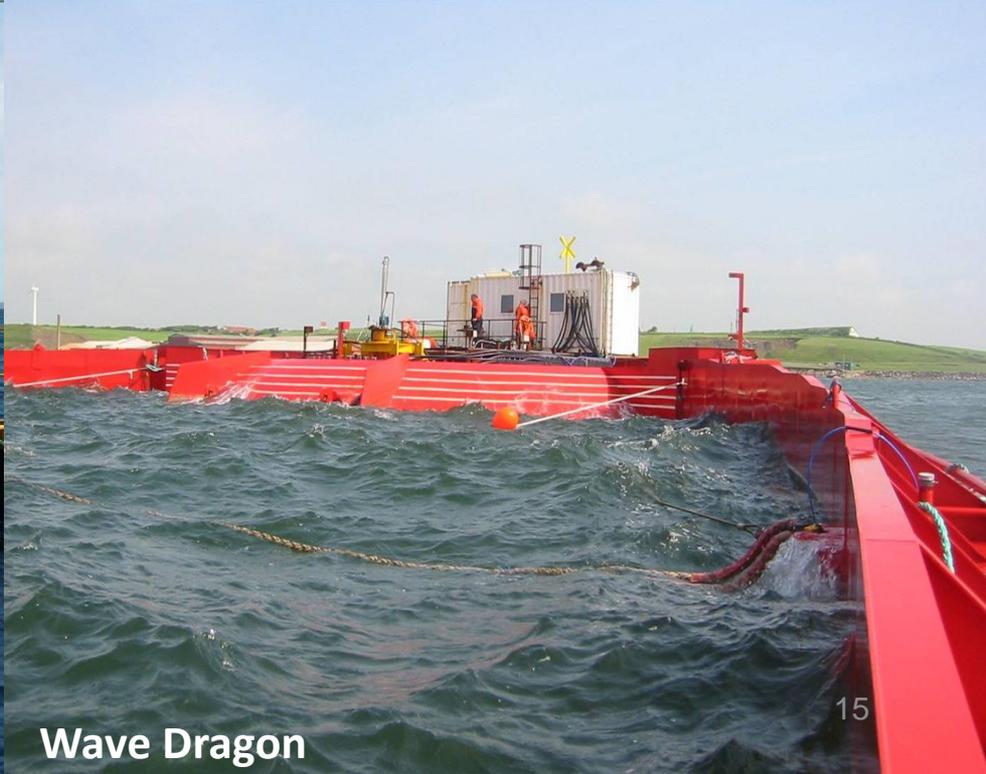
Wavestar



OPT



OE Buoy



Wave Dragon



A project without borders





The global outreach

INORE



*International Network on
Offshore Renewable Energy*



- 650 members
- Made By and For Researchers
- To realize the power of offshore renewables



A life experience



Living in Denmark

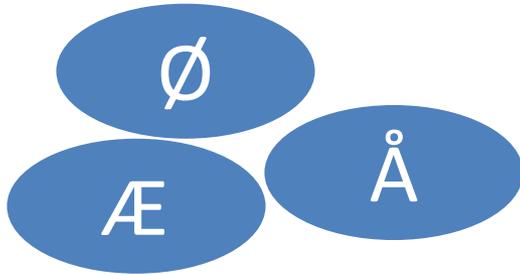
in summer



and ... in winter



A multi-cultural training



I 
CPH



Conclusions

The Power of Waves to my Lifelong Learning (Marie Curie Initial Training Network)

- ✓ A role within current energy problems
- ✓ Lot of opportunities (as well as challenges!)
- ✓ Multi-disciplinary education and training
- ✓ Innovative research
- ✓ World wide networks
- ✓ International experience
- ✓ Mobility without borders
- ✓ A language and cultural learning

Questions or comments?
Thank you for your attention



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