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Changement climatique et évolution de l'enseignement: les ouvrages offshore



A need for optimisation





Need for optimisation :





TC209 & CFMS activities





TC209 activities

 <u>https://www.issmge.org/committees/technical-</u> <u>committees/applications/offshore</u>

- Activity 1 : Preparation of lecture material to be used in universities/schools to encourage broader participation in the profession:
 - Current focus is on developing a programme of short state of the art/practice seminars

• Activity 2: Organise global webinar series



Offshore Geotechnics

About	Sign-up to receive committee news
News	Short name: Offshore (TC209)
Terms of Reference	ISFOG 2020 (2022) Pre-Symposium Webinar Series
Membership	Six webinars are being held in 2022 streamed live and uploaded to YouTube (https://www.youtube.com/user/GeoinstituteASCE)
·	• Data Science 101 Bruno Stuyts (Ghent University) 18 January 2022
Time Capsule Project	• New proposed ISO/API p-y curves for piles in clays Philippe Jeanjean (BP America) 22 February 2022
Contact	New proposed ISO/API unified CPT-based method for axial pile capacity in sand Farrokh Nadim (NGI) & Barry Lehane (UWA) 15 March 2022
	• Fundamentals of Cyclic Loading in Offshore Geotechnics Carl Erbrich (Fugro) & Mike Rattley (Geowynd) 28 April 2022
	New Integrated design models for offshore wind turbines foundations (REDWIN JIP) Ana Page (NGI) 19 May 2022
	• New Design Tools for Laterally Loaded Wind Turbine Monopiles (PISA JIP) Byron Byrne (University of Oxford) 23 June 2022
	Click here to download Checklist from the Fundamentals of Cyclic Loading in Offshore Geotechnics webinar
	ISSMGE McClelland Honor Lecture
	• 1st McClelland Lecture - James D. (Don) Murff- Text
	1st McClelland Lecture - James D. (Don) Murff - Presentation
	• 1st McClelland Lecture - James D. (Don) Murff - Video
	• 2nd McClelland Lecture - Mark Randolph - Text
	2nd McClelland Lecture - Mark Randolph - Presentation
	2nd McClelland Lecture - Mark Randolph - Video
	• 3rd McClelland Lecture - Knut Andersen - Text
	3rd McClelland Lecture - Knut Andersen - Presentation
	3rd McClelland Lecture - Knut Andersen - Video

- 4th McClelland Lecture Alan G. Young Text
- 4th McClelland Lecture Alan G. Young Presentation
- 4th McClelland Lecture Alan G.Young Video

CFMS



Groupe de Travail « Fondations d'éoliennes offshore »

RECOMMANDATIONS POUR LA CONCEPTION ET LE DIMENSIONNEMENT DES FONDATIONS D'ÉOLIENNES OFFSHORE





Implementation of research results in offshore wind projects





Design development of the laterally loaded pile



PISA project



Experimental Modelling Field tests Semi-analytical models Goals: Goals: • Finding a modelling Identifying key that suits industry mechanisms needs Validating numerical models

Laboratory tests



Goals:Evaluating mechanical properties



Goals:

FEM

- Quantifying different effects on the monotonic response
- Transposing to other pile dimensions

Implementation of research results in offshore wind projects

- Check points :
 - Do the **physics** make sense?
 - Have the models / technologies been validated?
 - Is there an **added value** from using the research results?
- Structural response benchmarking with established design methodologies
- Benchmarked with **full-scale measurements** using as-built simulation models
- So how we do?
 - Carefully, systematically
 - Preferably in collaboration with R&D institutions

Importance of orders of magnitude as well as field tests







Merci

