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Poster n°27

FLOATING MODULAR ASSEMBLY OF WIND TURBINE FLOATERS

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Universidad de Oviedo, Universidá d'Uviéu, University of Oviedo

1. Introduction

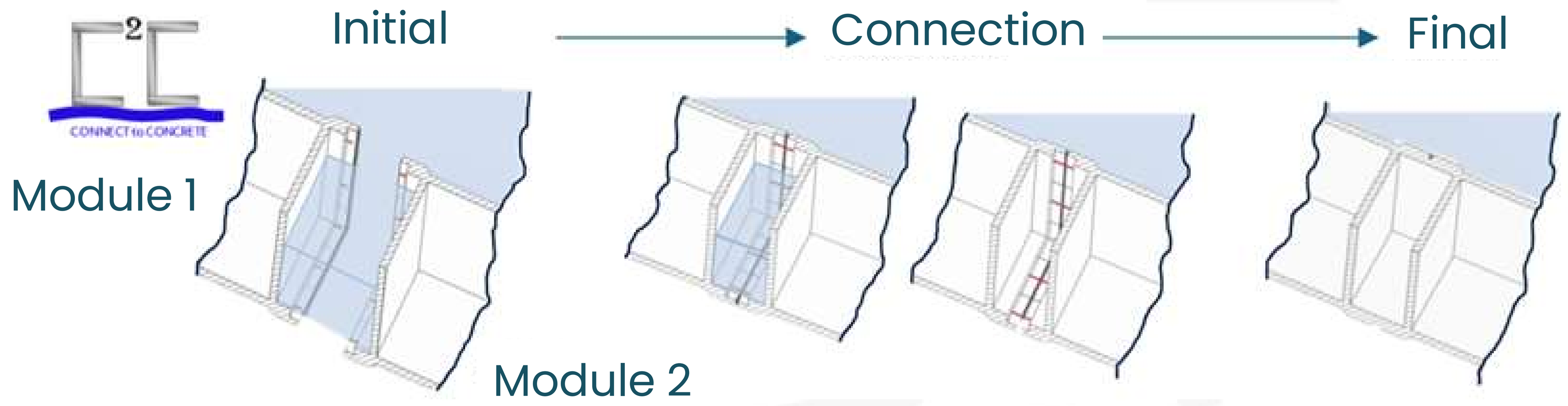
- Challenge in FOWT fabrication for ports. (Veers et al., 2023)
- Large member of heavy offshore floaters. (Crowle & Thies, 2022)
- Not big enough dry docks for entire floater construction (Elkinton et al., 2014)
- Modular concrete floater floating construction

Global floating wind forecast (Global Offshore Wind Report 2023)
• 83% → 270%

EC Estimated increase of offshore wind energy in Europe (MITECO)
•12 GW → 450 GW

Global target for offshore wind generation (Global Offshore Wind Report 2023)
•2500 GW

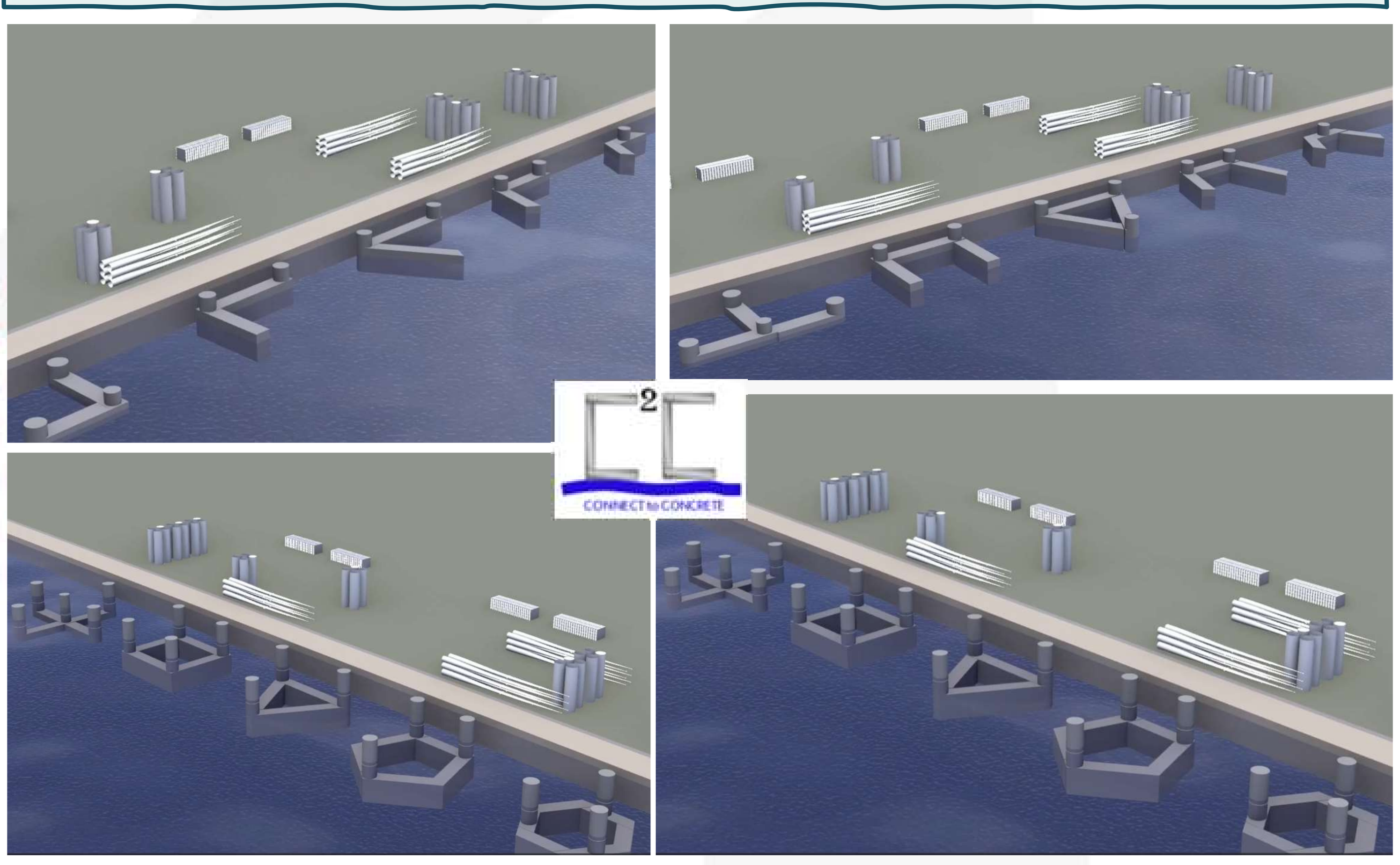
2. C2C. Connect 2 Concrete® Patent



- Floating concrete modules connection
- All section continuity ensured
- Concrete modular continuous and monolithic platforms
- No divers
- Blocked motions for safety during caissons connection and concreting

Industrial	Safe	Economical	Scalable
Code compliance	Customizable	Adaptable	Modular

3. Modular floater fabrication

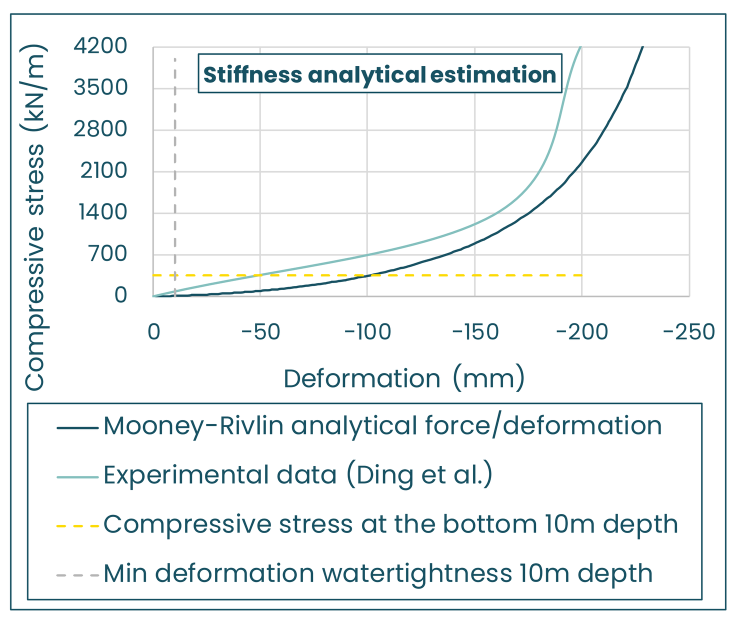


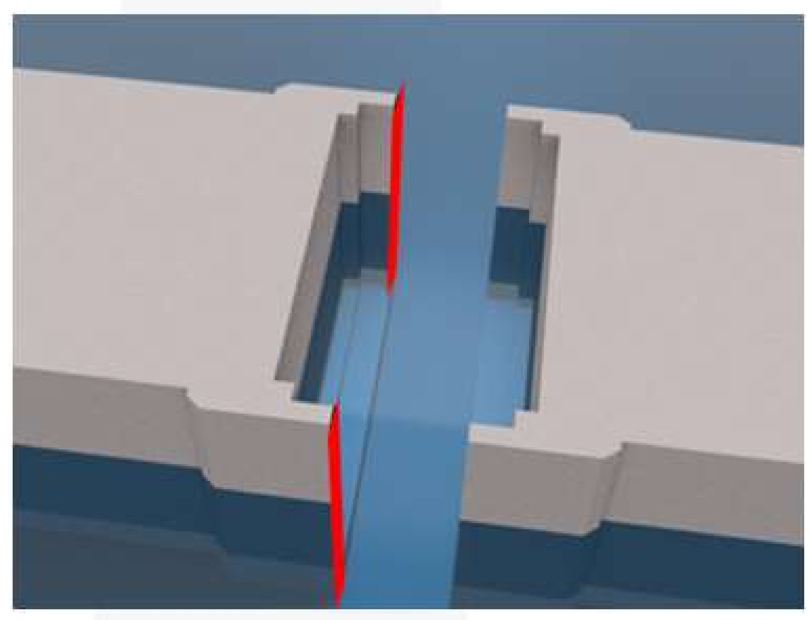
- FOWT concrete floaters constructed by modules
- Floating caissons mating made by C2C Patent
- Adaptable to **ANY TYPE AND SIZE** of floater

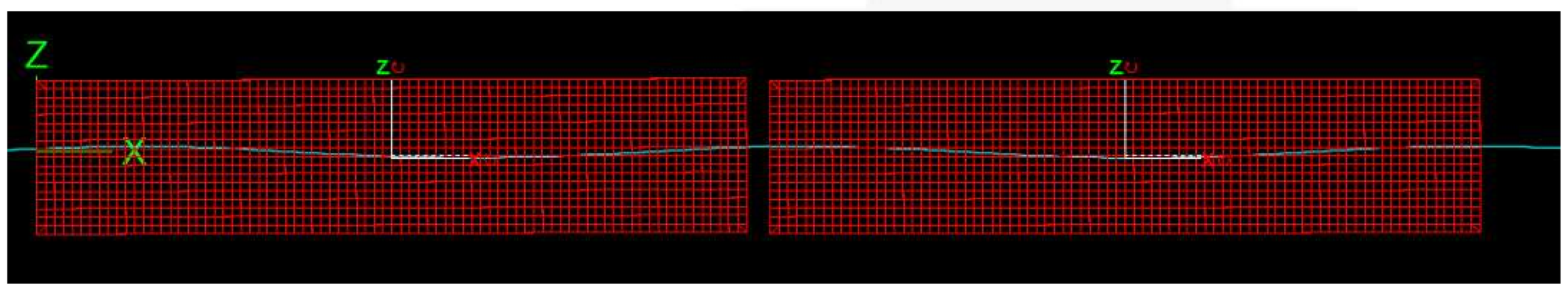
4. Hydrodynamic analysis of the mating

Methodology

FDA Multibody Analysis input → Joint stiffness analytical estimation → Watertight joint 3D modeling → Caissons mating → Ballast heel-trim compensation → Dynamic analysis







5. Conclusion and future research lines

- Watertighness compression ensured by installation devices
- Relative caissons motions within tolerances (temporary ballasting)
- Future external alignment aids dynamic analysis
- Future basin test for model calibration

Confidentiality

- The patents, trademarks website know-how of C²C and ALFOWT are exclusively owned by Safier Ingenierie SAS.
- Nothing can be communicated outside SIsas without SIsas approval.

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