

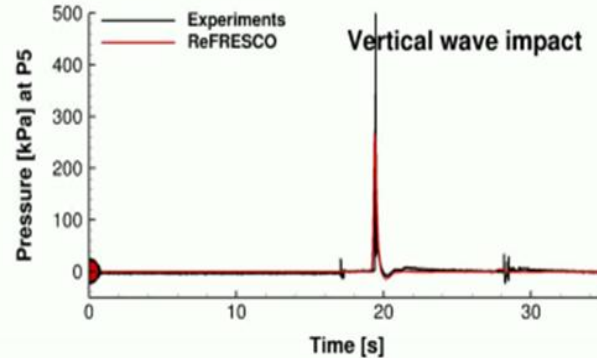
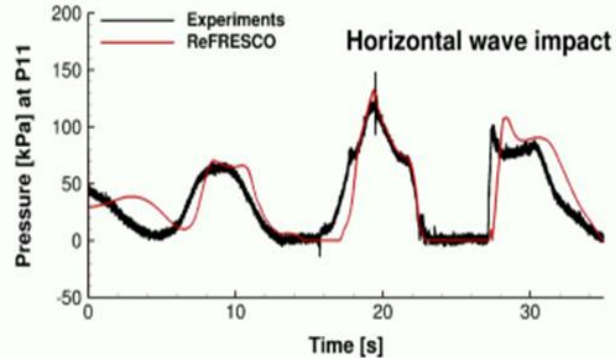
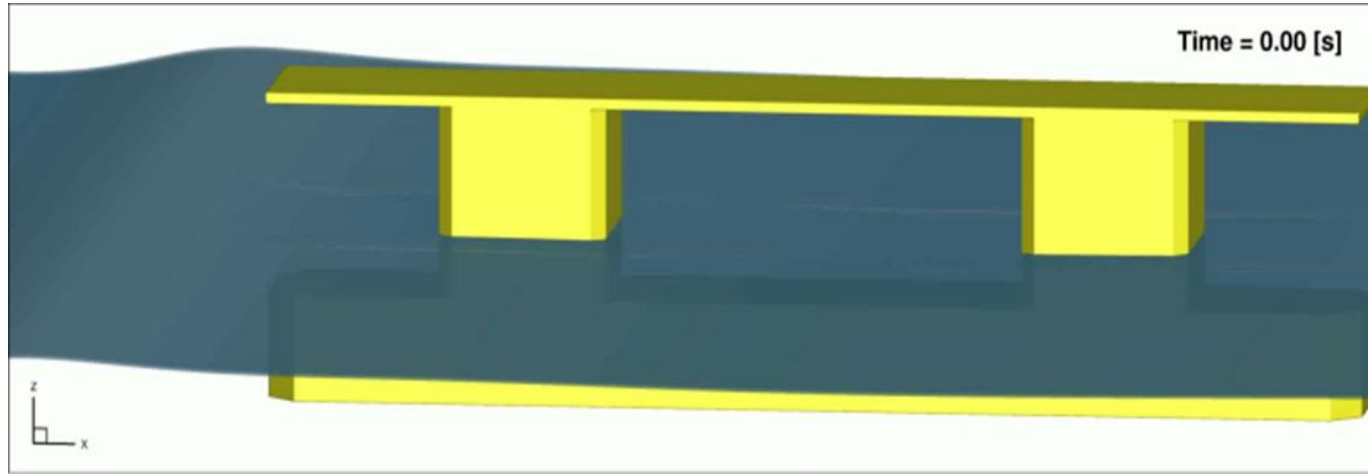


BETTER SHIPS, BLUE OCEANS

Pitch new Riser Balcony JIP

Jaap de Wilde & Joop Helder & Peter Wellens





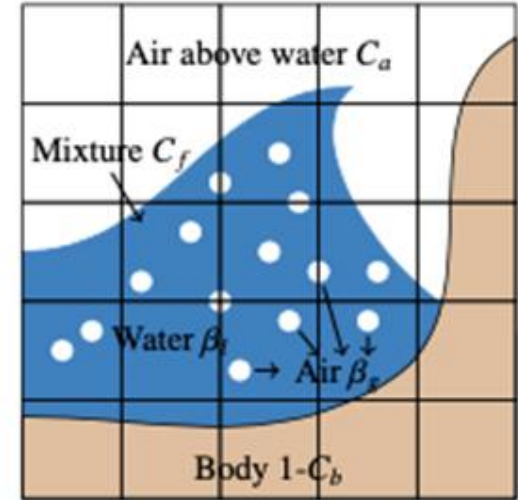
500+ kPa
dt 10 ms

*Riser Balcony JIP will **answer** the question if measured peak impact loads for overhanging appurtenances on the side on a FPSO are yes/no conservative and **why** they are yes/no conservative.*

*Next, a **guideline** will be developed for realistic modelling of peak impact loads.*

The following ‘sources’ for (over)conservative peak loads will be investigated:

- ✓ geometry and porosity
- ✓ static versus dynamic FE loading
- ✓ scale effects
- ✓ cushioning effect by aeration
- ✓ statistics & probability



TUD (2023)

- ✓ State-of-the-art background knowledge of peak impact loads for risers balconies (EPC)
- ✓ MARIN ComFLOW CFD study
- ✓ MARIN FE modelling of overhanging appurtenances on the side of a FPSO
- ✓ TUD experimental investigation of cushioning effect by aeration
- ✓ Summary report with recommended practices (EPC)
- ✓ JIP management (MARIN)

- [-] Bandringa et al., 2016, Validation of CFD for run-up and wave impact on a semi submersible, ICVF, Osaka, Japan.
- [-] Scharnke & Helder, 2023, Scale effects and variability in wave-in-deck type impact loading, BreaKin JIP, Melbourne, Australia.
- [-] Eijk, M. van der & Wellens, P. R., 2023, An efficient pressure-based finite volume method for multiphase compressible aerated water-wave interaction with moving bodies, Journal of Computational Physics.



BreaKin JIP (2016-2019)

- Time Schedule
 - Open Kick-Off Meeting : Autumn 2025
 - Duration of the JIP : 2 years
- Budget
 - 40 k€ fee for operators
 - 30 k€ fee for EPC contractors
 - 20 k€ fee for research institution



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