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Transit VIV JIP Pitch

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Transit VIV JIP

Motivation



- > Improve understanding of the transitional operation of offshore rigs from well to well in terms of:
 - Drilling riser VIV (Vortex-Induced Vibration)
- > Most operators specify 0.5 knots as the maximum transiting speed with a deployed drilling riser, but this threshold speed lacks justification and analysis.
- > This research will allow:
 - Improved VIV fatigue prediction techniques
 - Help justify safe transiting speeds of offshore rigs, thus
 - Reducing the transportation of rig charter cost by millions of dollars

Objectives & Outcomes



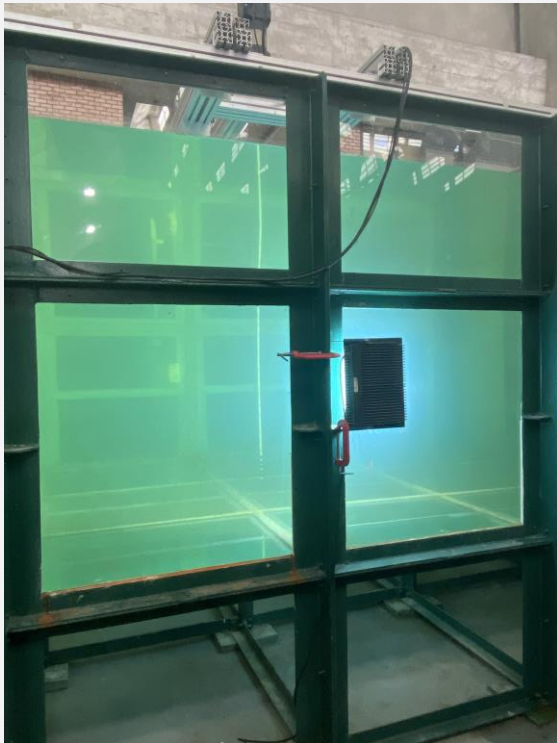
- > The field measurements will be used to measure and quantify the VIV on the drilling riser under various conditions.
- > The data will be used to improve the database of super-critical Reynolds number VIV response data, which to date includes only a limited number of cases with hung-off drilling risers.
- > Analysis of the field measurements will improve the understanding of drilling riser VIV and will be valuable to improving and ensuring that current VIV prediction programs can properly model the VIV behavior during transits from well to well.

Test Facility	Velocity Range	Diameter	Re (Expected)
LOC FLUME (short model)	0-0.9 knot	0.5 – 2 in	4000 - 50000
LABOCEANO OCEAN BASIN (long model)	0-0.9 knot	0.5 – 2 in	2000 - 15000
Full Scale Drill String	0 – 2.0knot	6 in ->	2000 - 160000

Facilities (Scaled Testing)



- > At the Universidade Federal do Rio de Janeiro (UFRJ), the JIP is proposed to be coordinated by UFRJ incorporating the wave tank facilities from the Laboratório de Ondas e Correntes (LOC), LABOCEANO, and COPPE



Full Scale Testing

- > Experiment planning including looking for Instrumentation sourcing & supply (Nav CON), installation of instrumentation, safety considerations, checking in on during campaign, liaison with operators, removal of instrumentation.
 - Attention to recording of metocean conditions.
 - Attention to recording of physical and geometric riser systems.
 - Measure and quantify VIV during well to well transits by systematically increasing vessel speed and monitoring resulting VIV. Ideally this will be done with little to no subsea currents. Repeat tests if possible in the presence of subsea currents of various directionalities that will result in different relative velocities



NAVCON RISER SENSORS



- ## TRANSIT JIP SCHEDULE

[illegible]

Questions ??

Engineering solutions



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