

WLNG FST Engineering Completion

WLNG FST Extreme Weather Analysis

Inputs and FST

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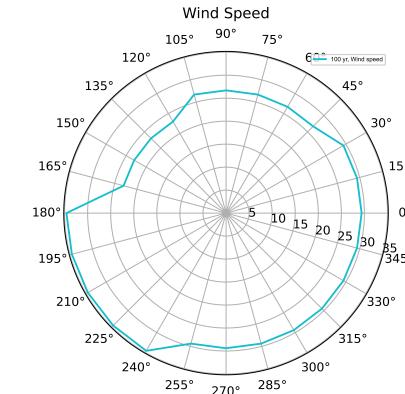
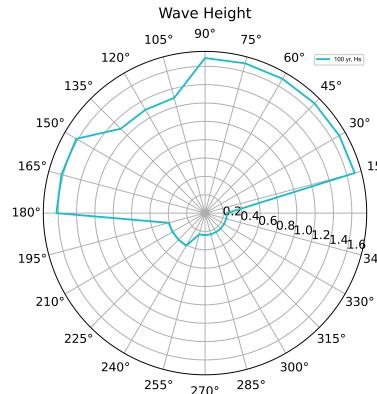
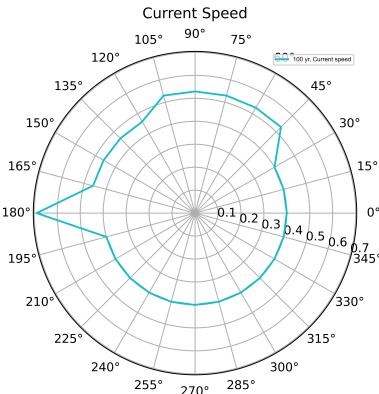
Introduction

- FST analysis for WLNG

Design Data

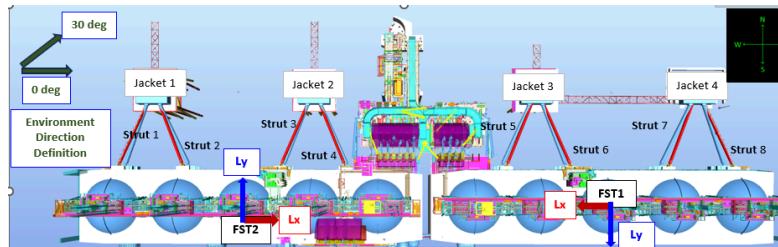
Analysis Methodology

Design Data - Environment



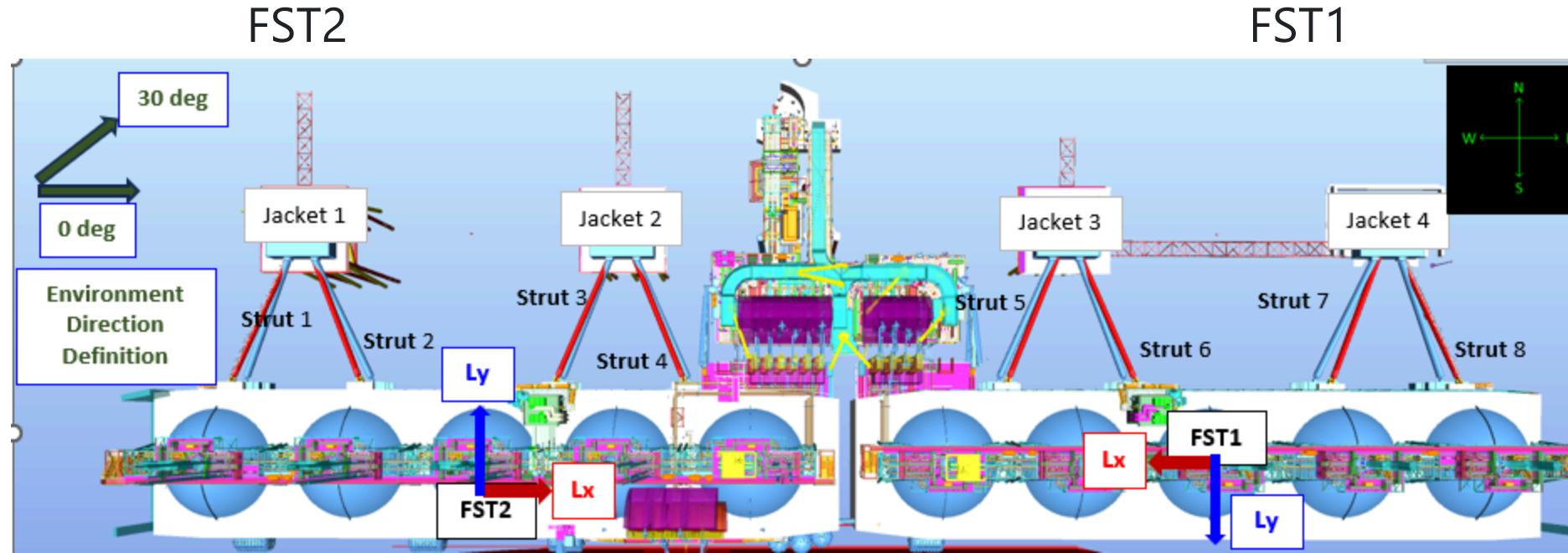
FST2

FST1



- Radial plots axis is based on environment direction

FSTs Only, General Arrangement



- strut, jacket and FST numbering shown
- FST local axes shown

Methodology

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Methodology - Analysis

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Methodology - Result Interpretation

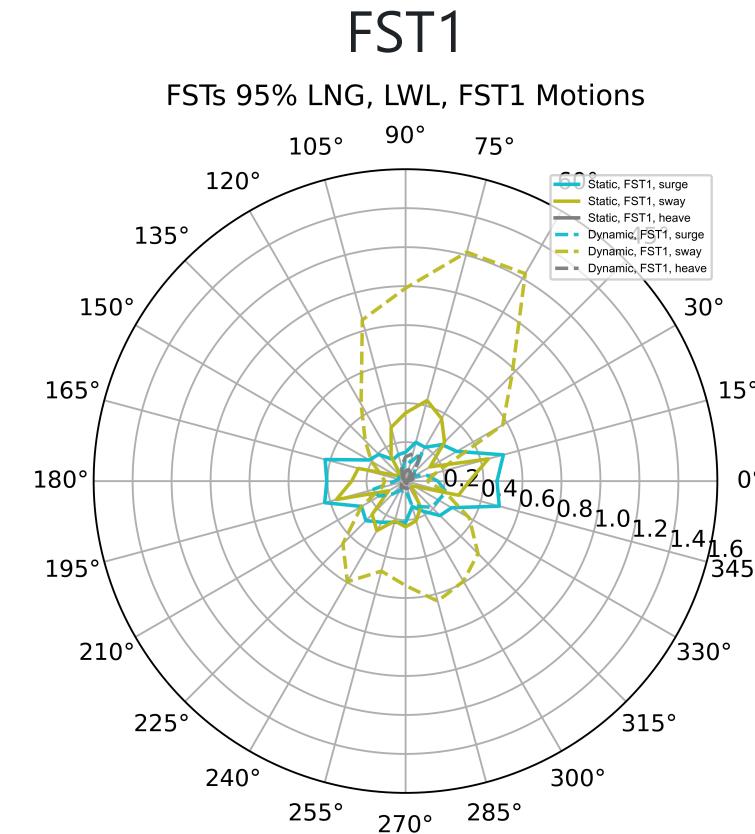
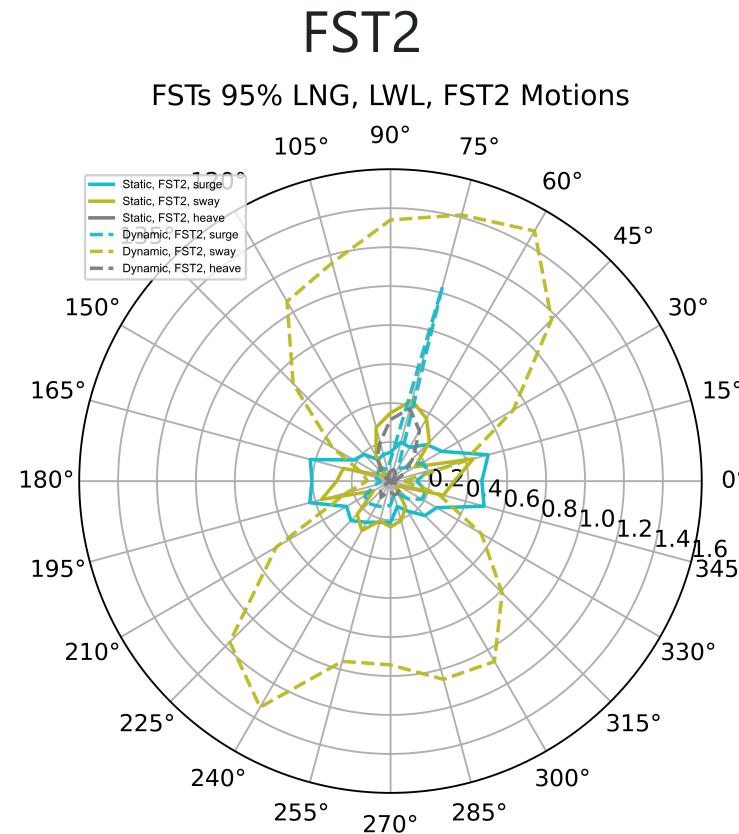
- Timetrace plots are actual values (not statistical)
 - Strut positive tension is tension and negative tension is compression i.e. axes independent values
 - Jacket forces are in global X and Y direction
 - FST forces are in FST local axes
- Radial/rose plots - ONLY positive values used
 - Objective:
 - For understanding value change with direction.
 - The increase/decrease help determine the max force directions.
 - Static values: absolute values
 - Dynamic values: absolute maximum i.e. max (abs(max), abs(min))

100 year Analysis Results

FST Motion Response

FSTs 95% LNG, 100yr, LWL - FST Surge and Sway

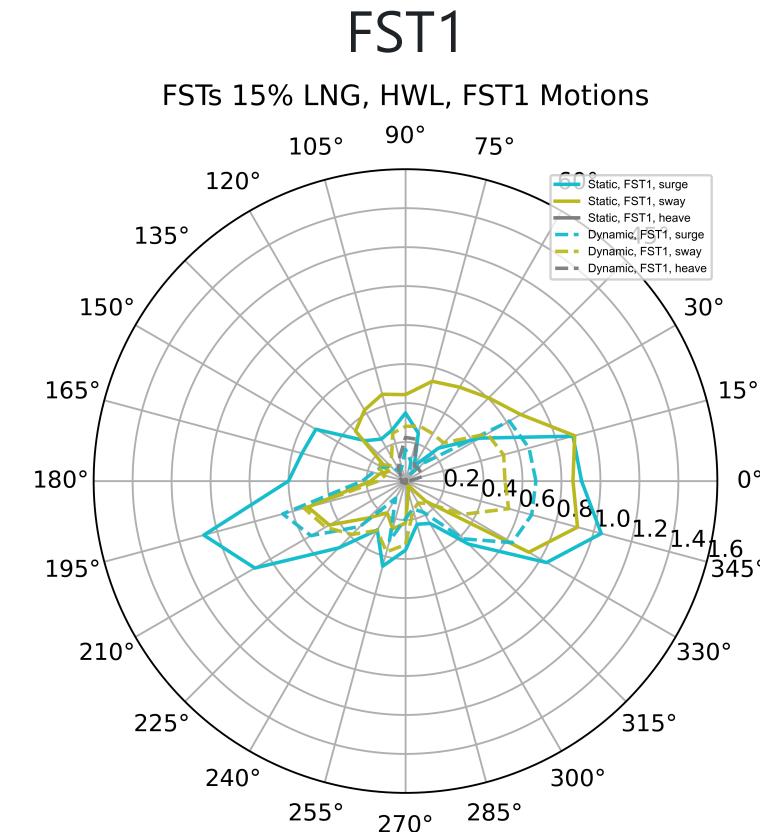
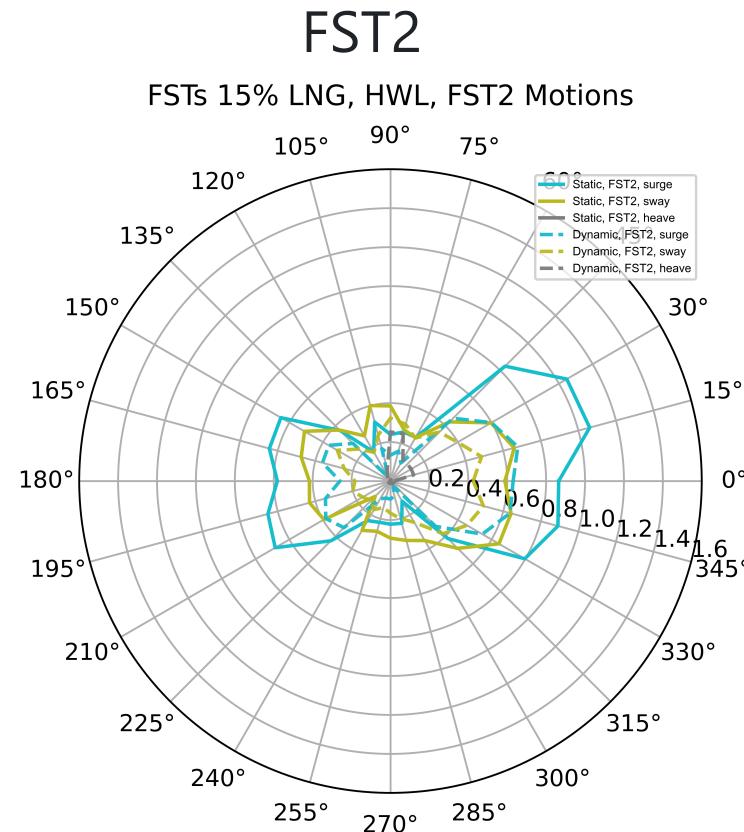
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FSTs 15% LNG, 100yr, HWL - FST Surge and Sway

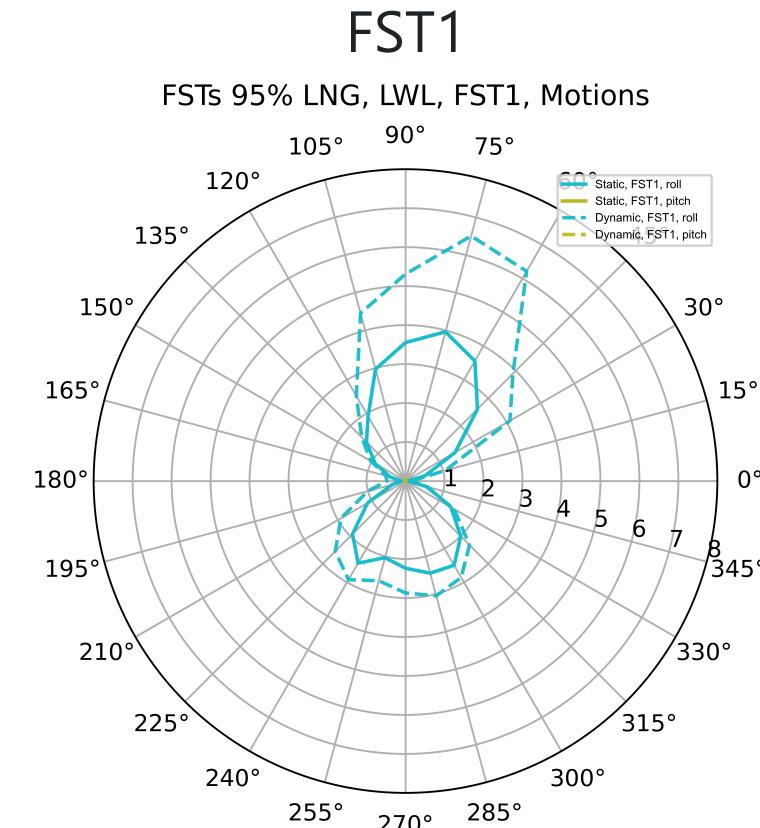
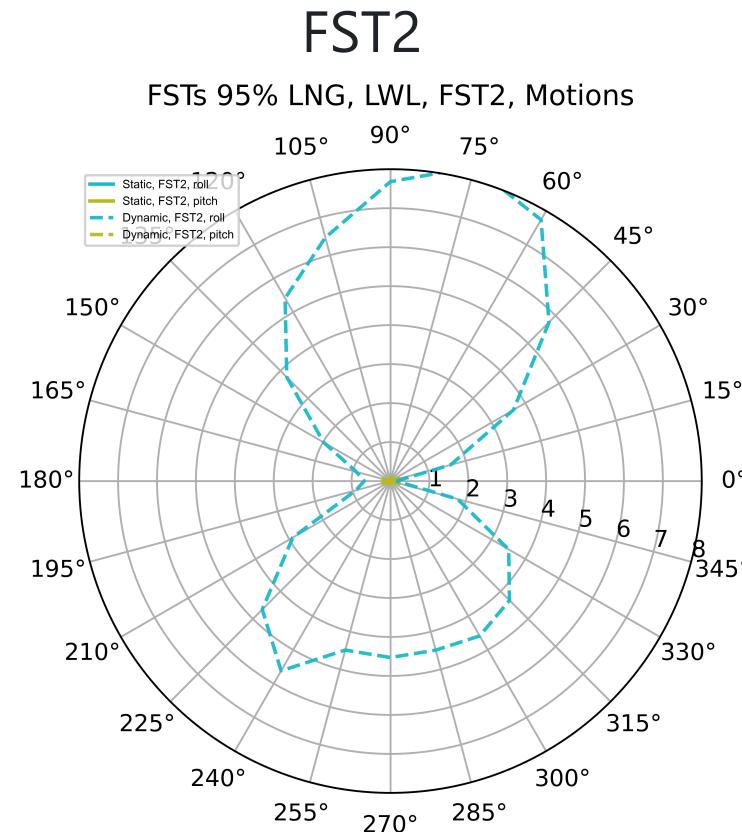
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FSTs 95% LNG, 100yr, LWL - FST Rotations

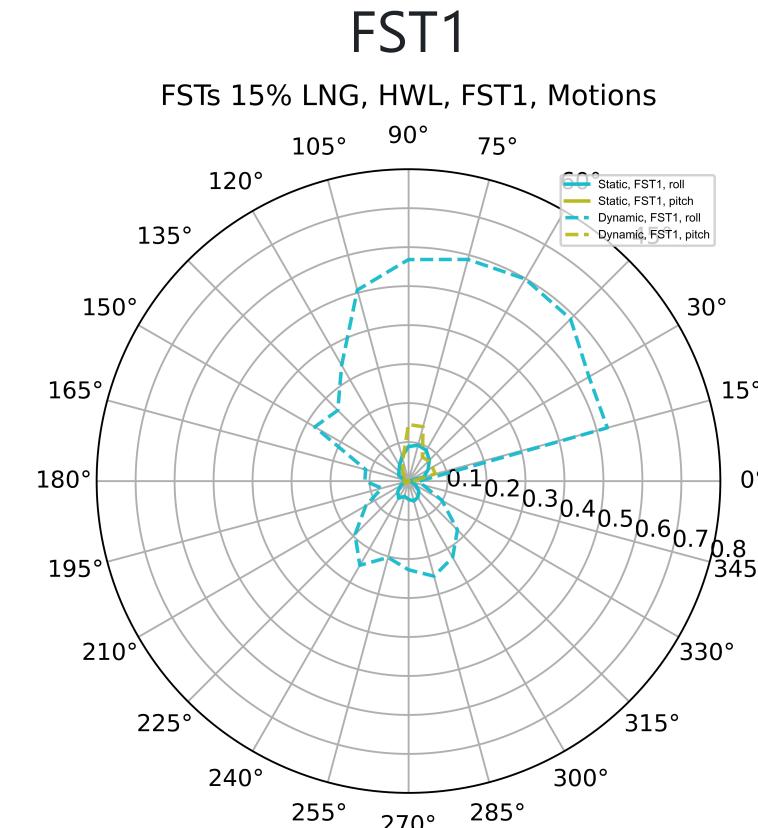
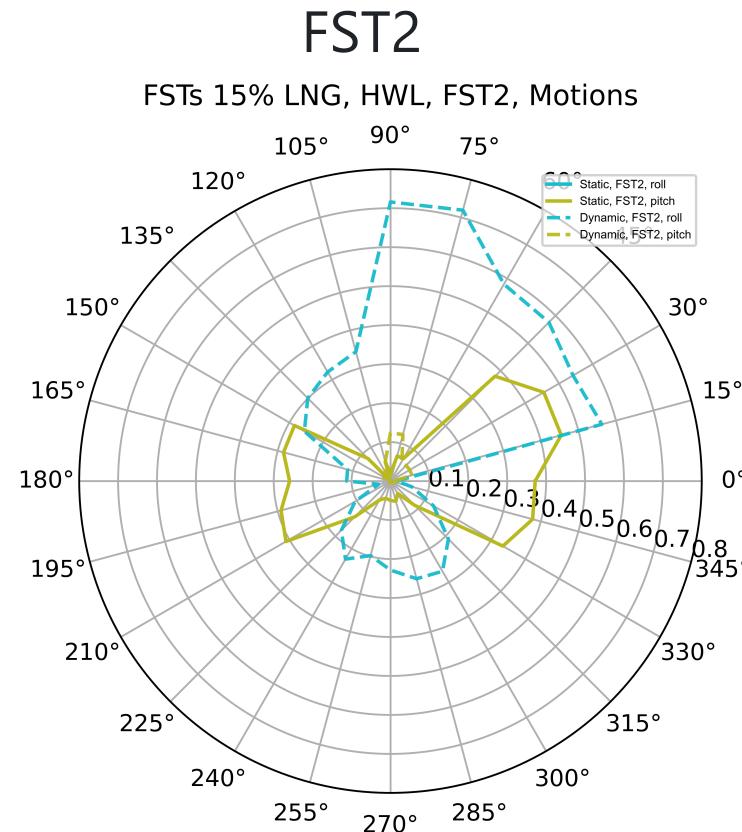
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FSTs 15% LNG, 100yr, HWL - FST Rotations

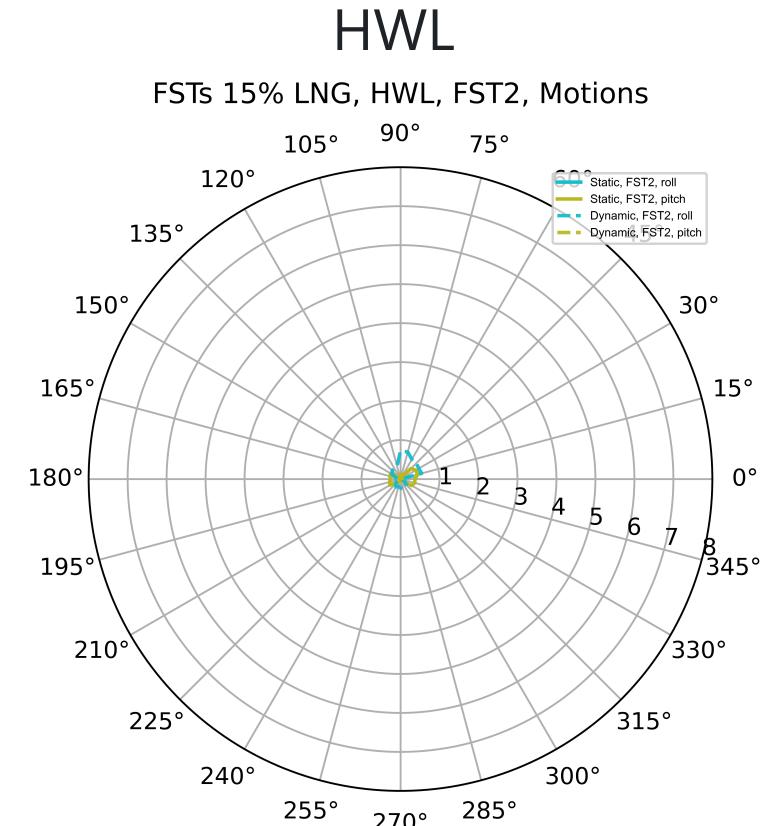
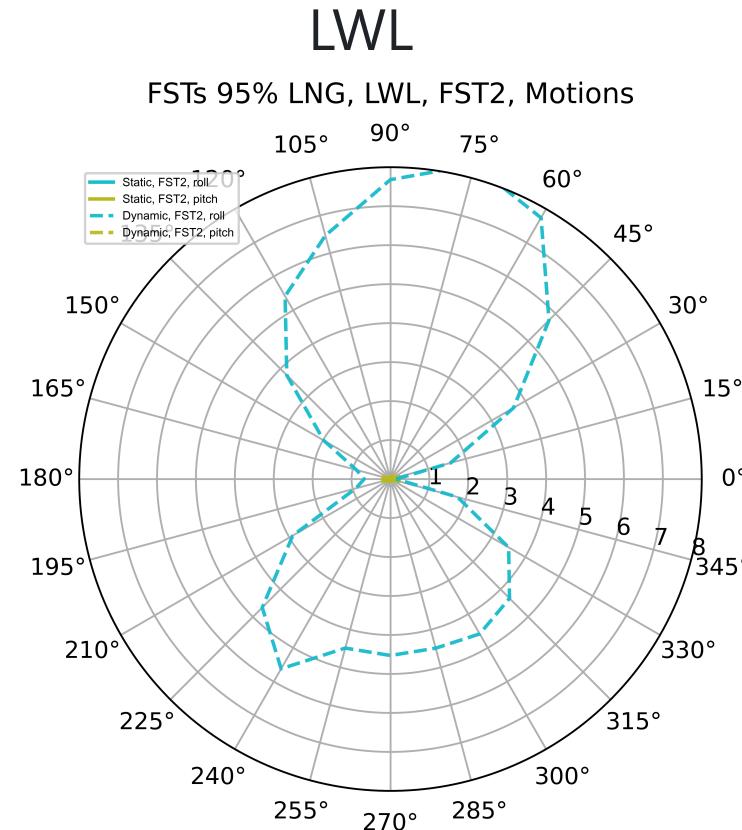
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FST Rotations, 100 yr, LWL vs. HWL

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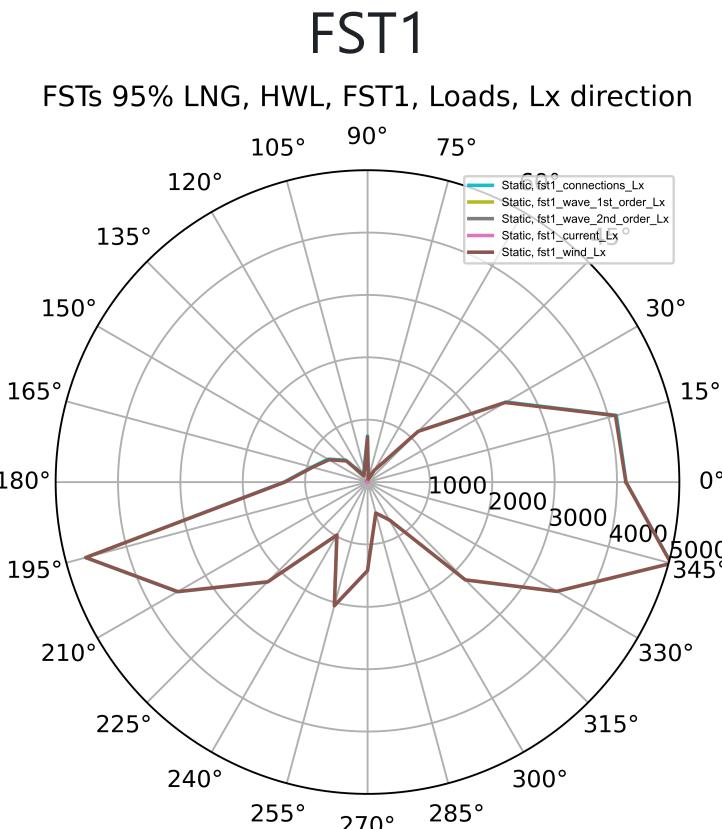
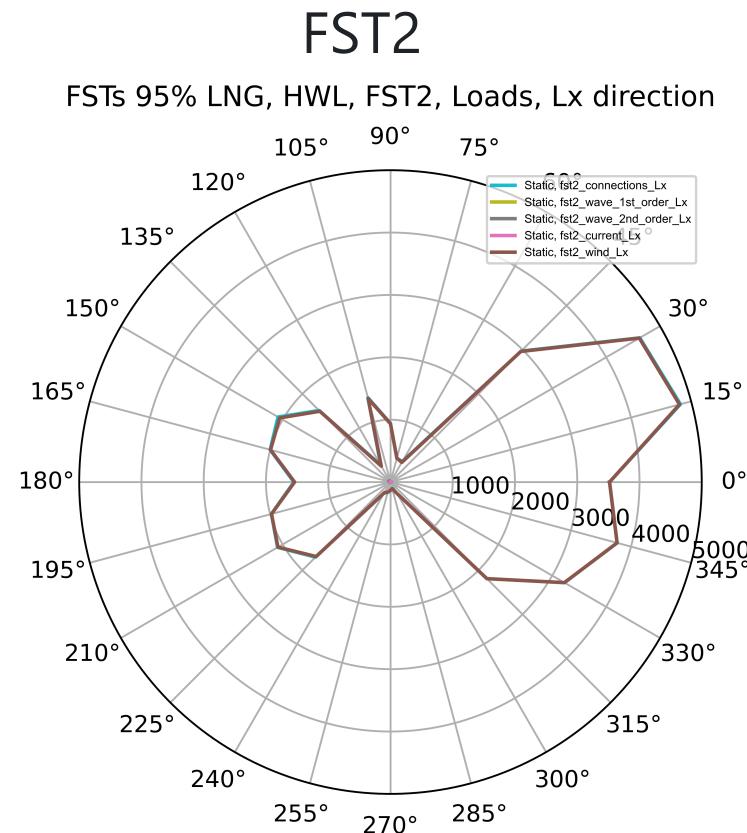


- 15% LNG, HWL has low roll rotations compared to 95% LNG, LWL

FST Load Response, Static

FSTs 95% LNG, 100yr, HWL, FST Forces, X Direction

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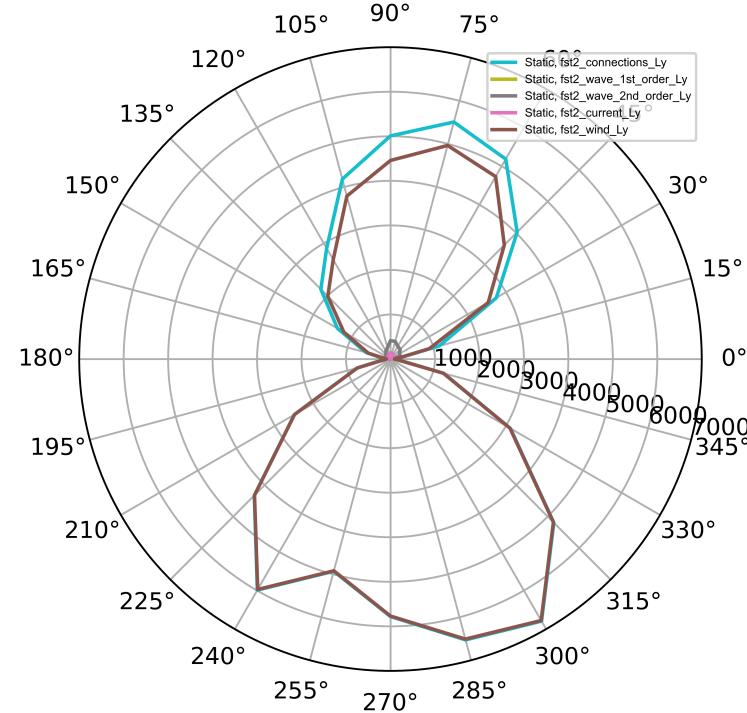
- Wind loads dominate the FST forces

FSTs 95% LNG, 100yr, HWL, FST Forces, Y Direction

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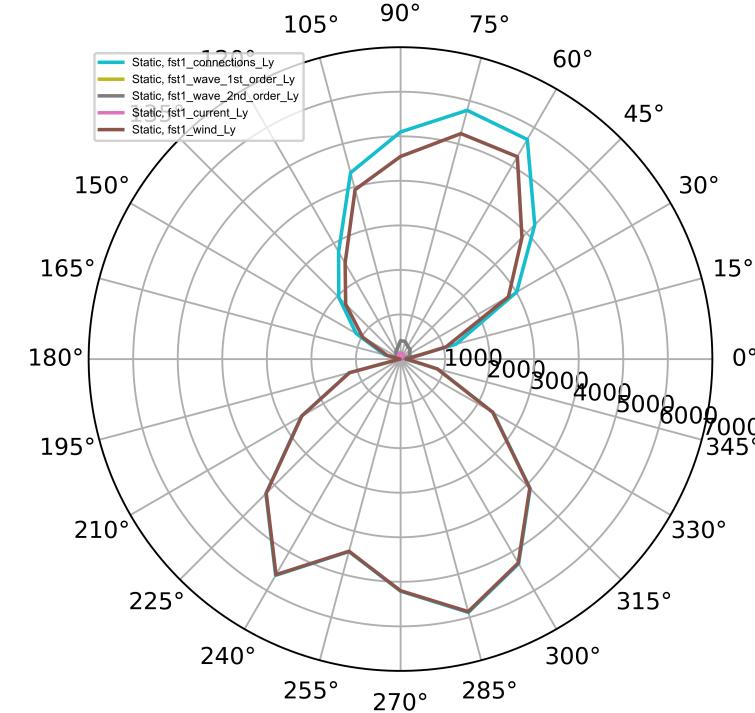
FST2

FSTs 95% LNG, HWL, FST2, Loads, Ly direction



FST1

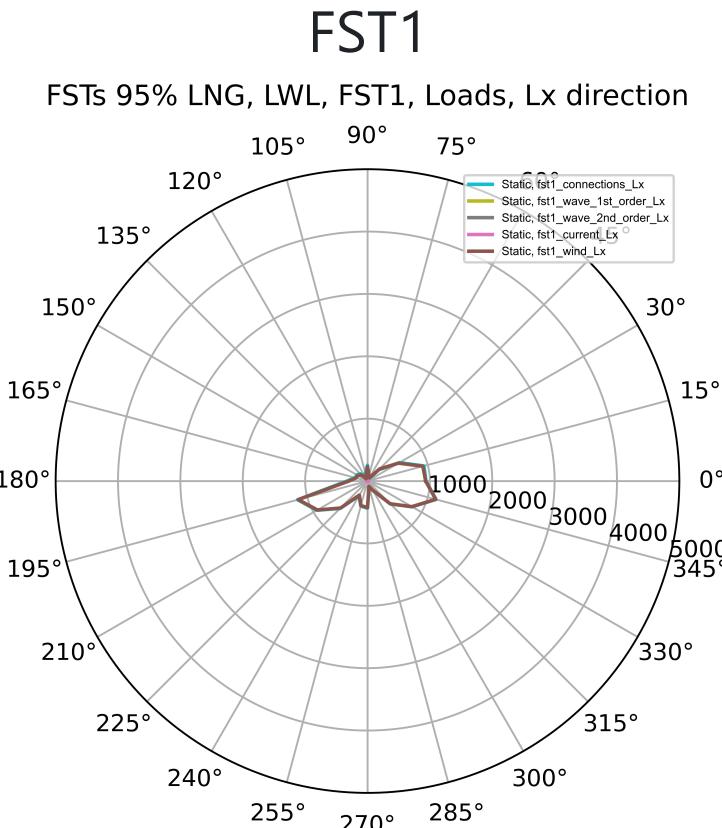
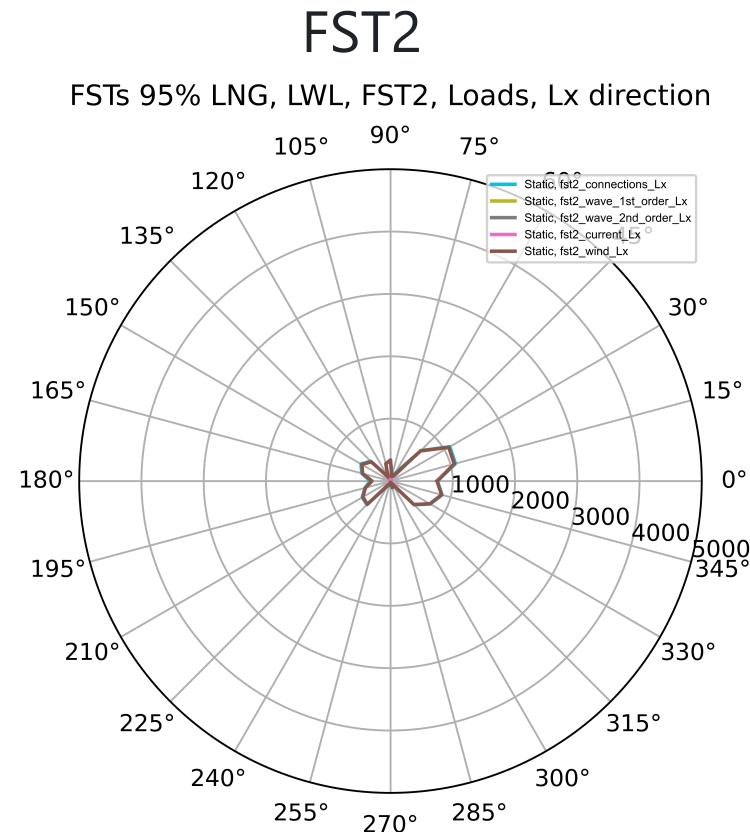
FSTs 95% LNG, HWL, FST1, Loads, Ly direction



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FSTs 15% LNG, 100yr, LWL, FST Forces, X Direction

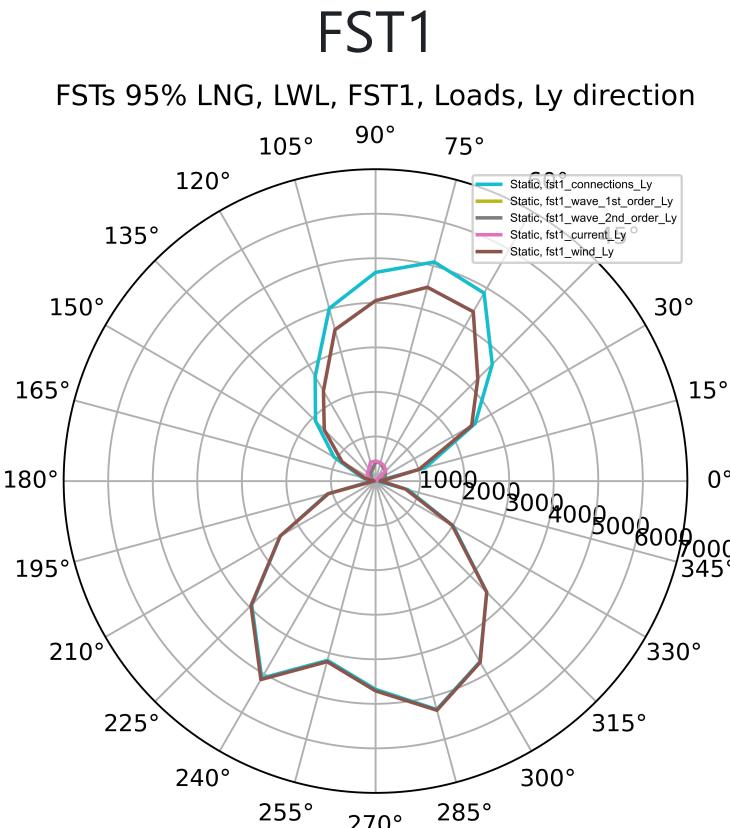
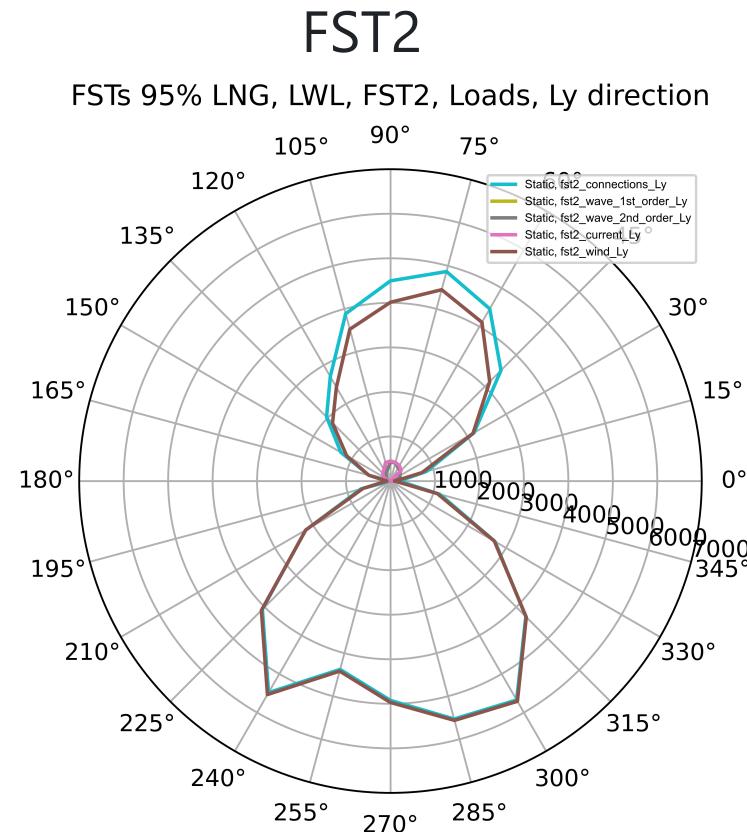
- TBA



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FSTs 15% LNG, 100yr, LWL, FST Forces, Y Direction

- TBA



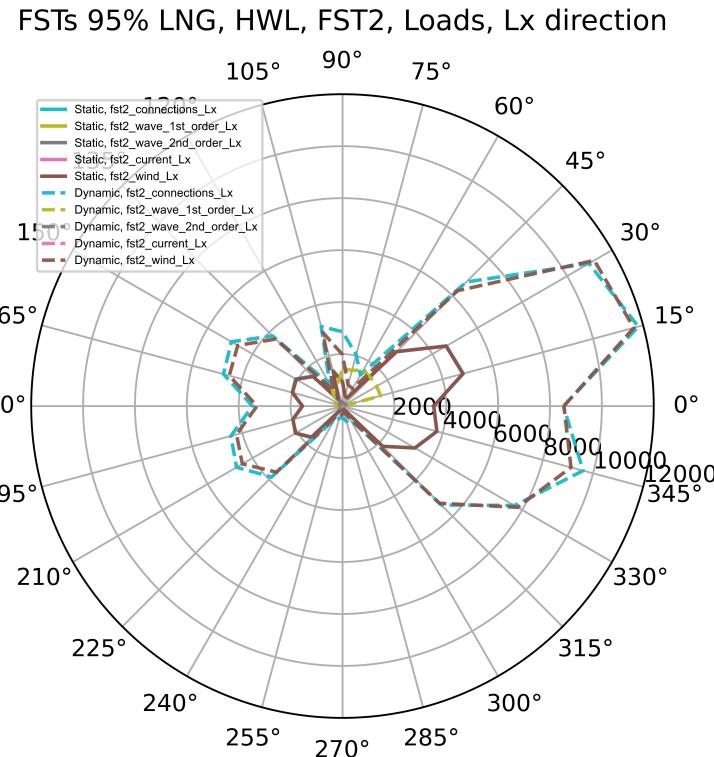
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FST Load Response, Dynamic

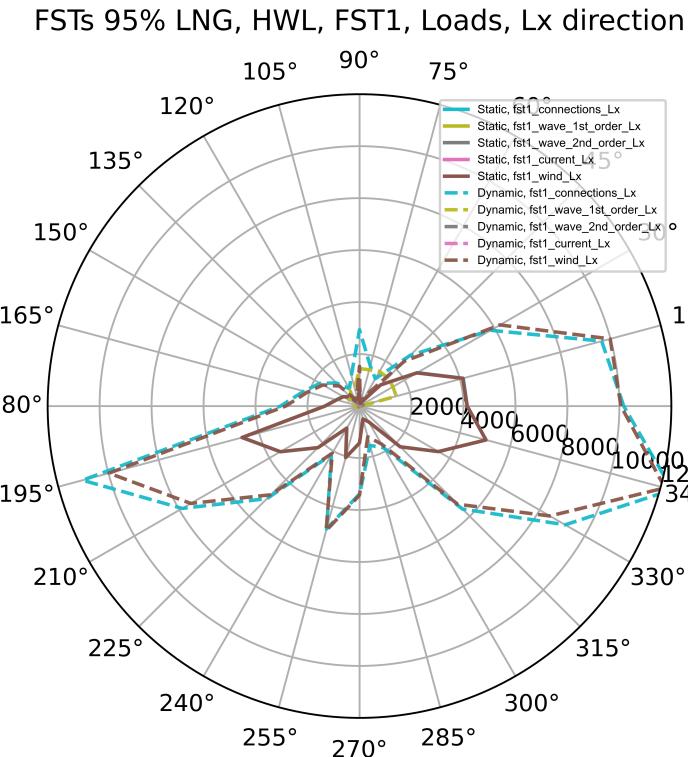
FSTs 95% LNG, 100yr, HWL, FST Forces, X Direction

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FST2



FST1



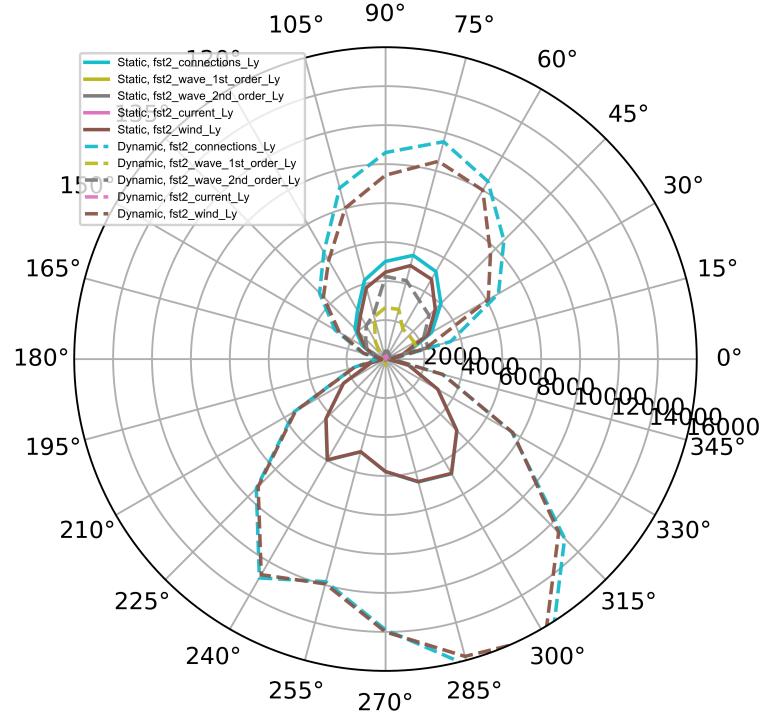
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FSTs 95% LNG, 100yr, HWL, FST Forces, Y Direction

- TBA

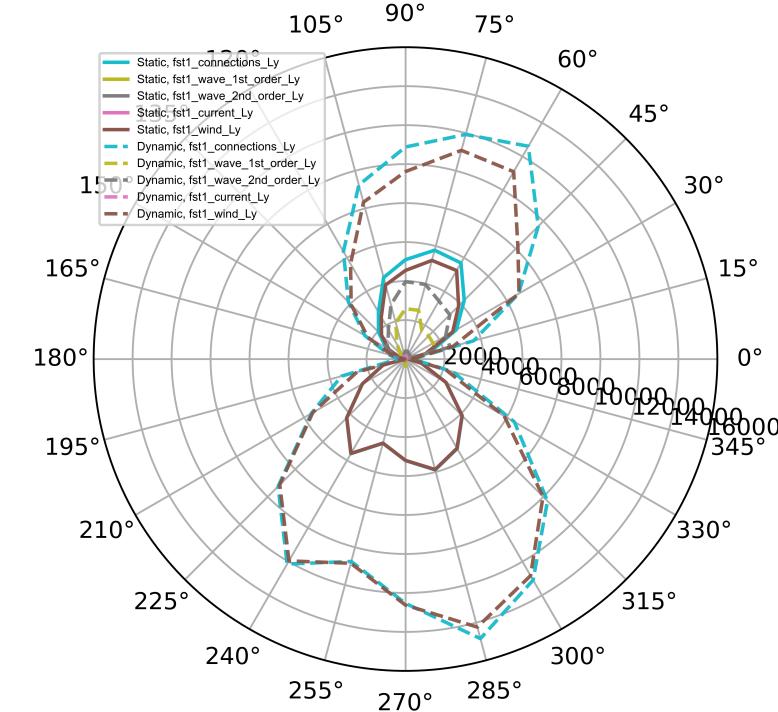
FST2

FSTs 95% LNG, HWL, FST2, Loads, Ly direction



FST1

FSTs 95% LNG, HWL, FST1, Loads, Ly direction



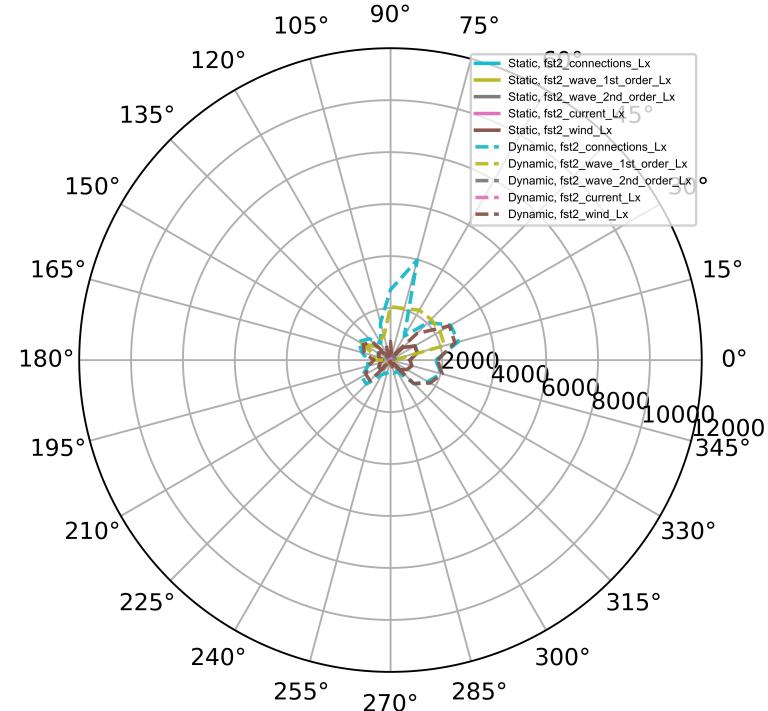
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FSTs 15% LNG, 100yr, LWL, FST Forces, X Direction

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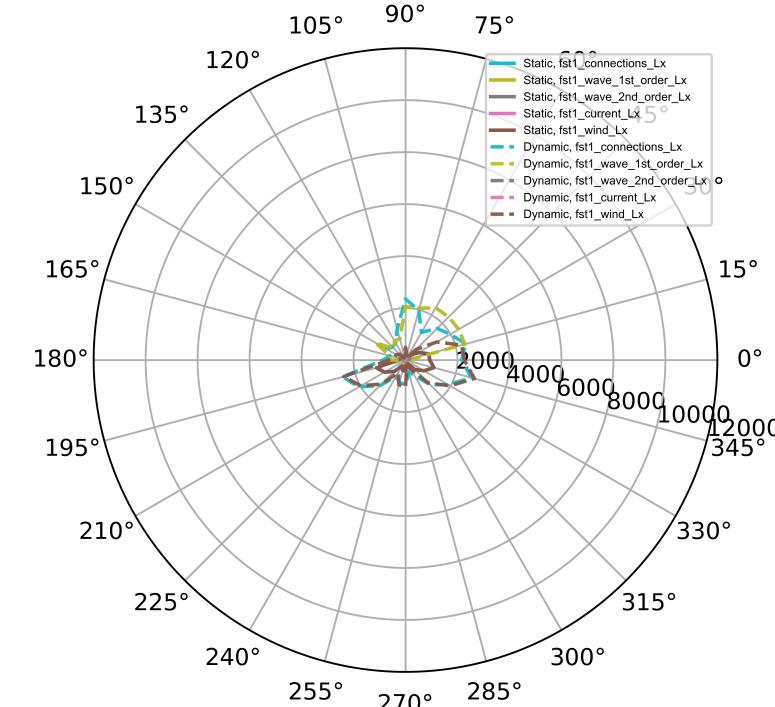
FST2

FSTs 95% LNG, LWL, FST2, Loads, Lx direction



FST1

FSTs 95% LNG, LWL, FST1, Loads, Lx direction



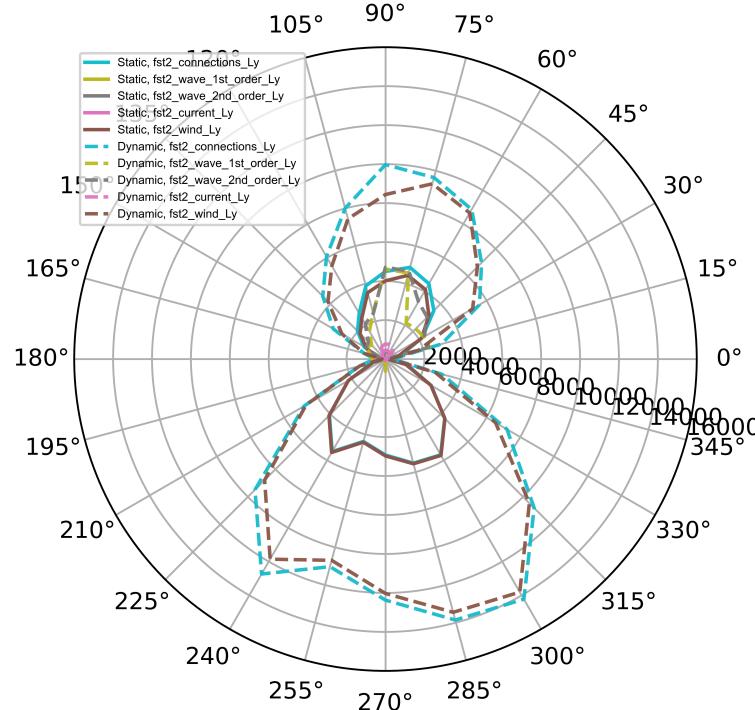
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FSTs 15% LNG, 100yr, LWL, FST Forces, Y Direction

- TBA

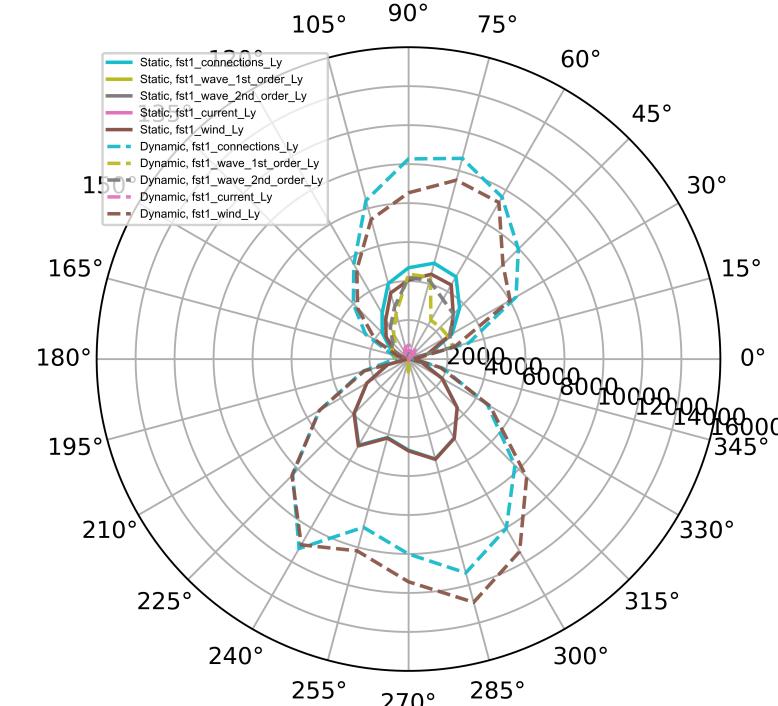
FST2

FSTs 95% LNG, LWL, FST2, Loads, Ly direction



FST1

FSTs 95% LNG, LWL, FST1, Loads, Ly direction



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