

# CODECHECK certificate 2025-007

<https://doi.org/10.5281/zenodo.15603144>



Item	Value
Title	Wind Tunnel Load Measurements of a Leading-Edge Inflatable Kite Rigid Scale Model
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Publication	<a href="https://doi.org/10.5194/wes-2025-77">https://doi.org/10.5194/wes-2025-77</a>
Codecheckers	Josip Grguric ( <a href="https://orcid.org/0009-0003-3725-9454">0009-0003-3725-9454</a> ) Yasel Quintero ( <a href="https://orcid.org/0009-0005-9240-7370">0009-0005-9240-7370</a> )
Date of check	2025-05-26
Summary	Full reproduction
Codecheck repository	<a href="https://github.com/codecheckers/certificate-2025-007">https://github.com/codecheckers/certificate-2025-007</a>

**Table 1: CODECHECK summary**

## Summary

This codecheck resulted in a full reproduction of the figures presented in the publication. The authors provided a GitHub repository containing all the necessary code and instructions for reproducing the figures. One minor adjustment was required: modifying the path to the data folder. Additionally, LaTeX is a required dependency, but this requirement was not mentioned by the authors and had to be identified independently.

Output	Comment
Fig6_min_trip_height.pdf	manuscript Figure 6
Fig7_zz_re_sweep.pdf	manuscript Figure 7
Fig8_re_variation_alpha_sweep_at_fixed_beta.pdf	manuscript Figure 8
Fig9_re_variation_beta_sweep_at_fixed_alpha.pdf	manuscript Figure 9
Fig10_polars_alpha.pdf	manuscript Figure 10
Fig11_polars_beta_double_alpha.pdf	manuscript Figure 11
Fig12_moment_polar_alphas.pdf	manuscript Figure 12
Fig13_moment_polars_beta_low_alpha.pdf	manuscript Figure 13
FigB1_sensor_drift.pdf	manuscript Figure B1
FigC1_total_support_structure.pdf	manuscript Figure C1
FigD1_time_series_plot.pdf	manuscript Figure D1
FigD2_PSD_100Hz.pdf	manuscript Figure D2
FigD3_PSD_10Hz.pdf	manuscript Figure D3

**Table 2: Summary of output files generated**

# CODECHECKER notes

The authors have made publicly available all the necessary code for reproduction. However, the data needed for reproduction of results was granted upon request.

Running the code was relatively straightforward. The instructions were clear and concise, with minor codechecker alterations necessary w.r.t. data paths and missing requirements.

With these issues out of the way, the code runs smoothly with all the figures of the related paper being faithfully reproduced.

## Installation prerequisites and computational environment

The authors provided a complete setup for creating a Python virtual environment using VENV, including a `requirements.txt` file that lists the package dependencies.

However, one system-level dependency was not documented: LaTeX must be installed on the user's operating system for the code to run successfully. Note that the LaTeX requirement is not related to the VENV environment, but to the operating system itself.

Relevant error:

“RuntimeError: Failed to process string with tex because latex could not be found.”

## Data preparation

Data is currently only available upon request. The authors have stated their intention to make the data publicly available upon publication.

Regarding the data setup instructions, the step involving the copying of data was somewhat unclear and open to interpretation. Specifically, it was not clear whether the user was expected to manually create a data/ directory, and if so, whether all downloaded files or only specific subfolders needed to be placed there.

To proceed, we created a top-level data/ folder and copied all the downloaded contents into it.

## Running the code

There was an error in finding the correct path for the data. The code would look for the data folder within the VENV library folders. To fix this issue we modified line [55 of src/load\\_balance\\_analysis/functions\\_utils.py](#):

Before:

```
project_dir = Path(__file__).resolve().parent.parent.parent
```

After:

```
project_dir = Path(__file__).resolve().parent.parent.parent.parent.parent
```

Note for MacOS users: The ``.DS_Store`` file is a hidden system file that stores folder view preferences. If you open the repository folder using Finder, this file may be created automatically. If present, the code may attempt to read it, resulting in the following error:

“error trying to read `.ds_store``”

To proceed, simply delete the ``.DS_Store`` file and re-run the code.

## Outputs

Figures are placed in the results directory. All figures match those in the publication.

It should be noted that the figures are not created until the very end of the code runtime, so if there is an error somewhere, the graphs will not be generated.

## Recommendations

The codecheckers suggest the following improvements for the authors:

- Include an estimation of the time it takes for the code to run. For this codecheck, the runtime was between 10-15 minutes.
- Ensure names and links in the repository’s README file are correct.
- Clearly state that LaTeX must be installed, as the code will not run without it.
- Explore why there was a need to add “parent.parent.parent” to the code. It may be helpful to determine whether this is related to OS-specific path handling.
- Provide clearer, more detailed instructions for the data copying steps to remove ambiguity.

# Manifest Files

Fig6\_min\_trip\_height.pdf

Comment: Figure 6 in the manuscript.

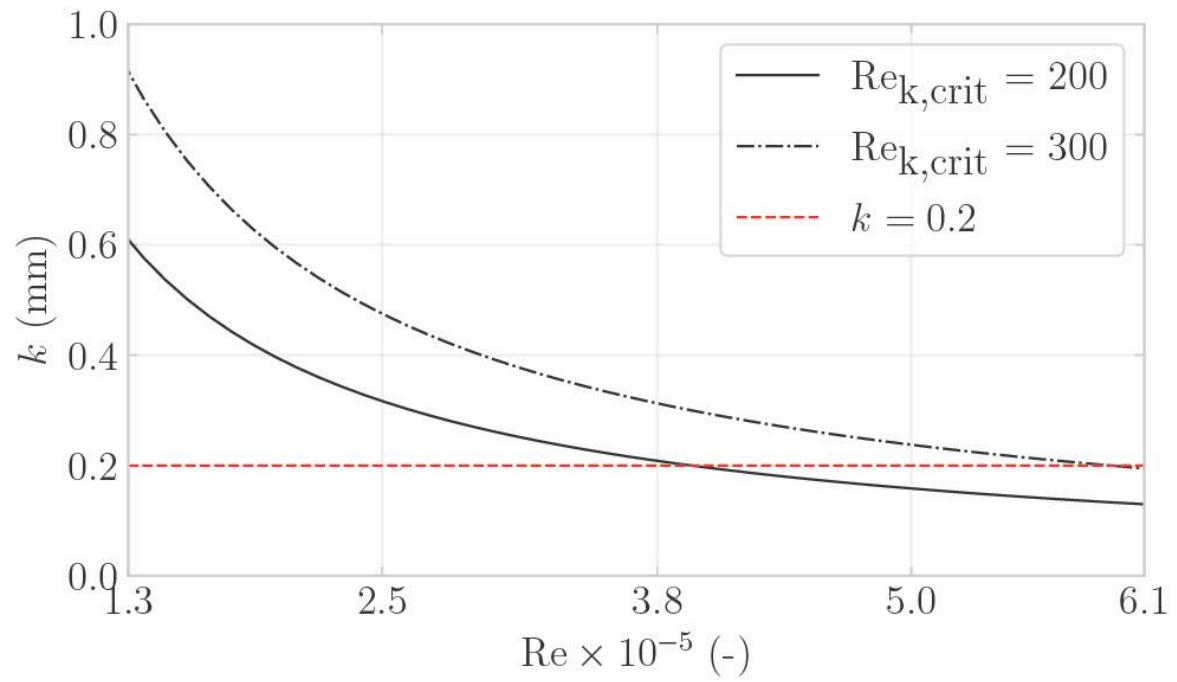


Fig7\_zz\_re\_sweep.pdf

Comment: Figure 7 in the manuscript.

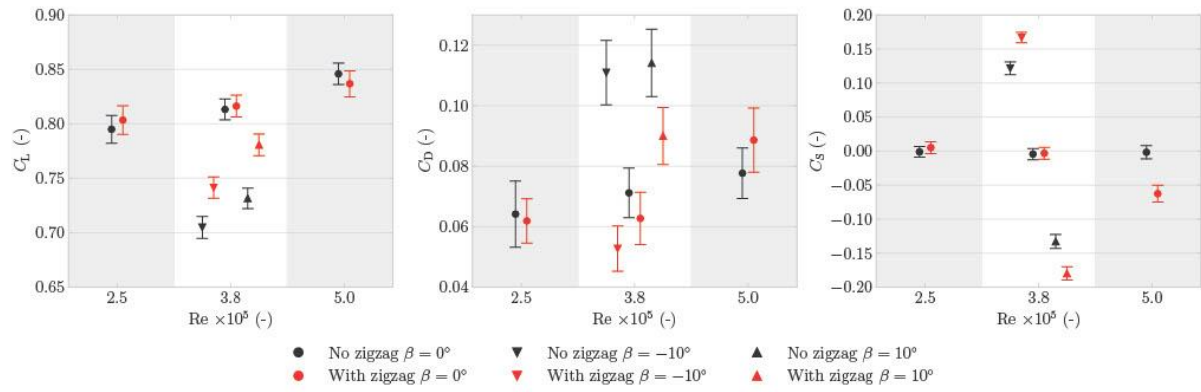


Fig8\_re\_variation\_alpha\_sweep\_at\_fixed\_beta.pdf

Comment: Figure 8 in the manuscript.

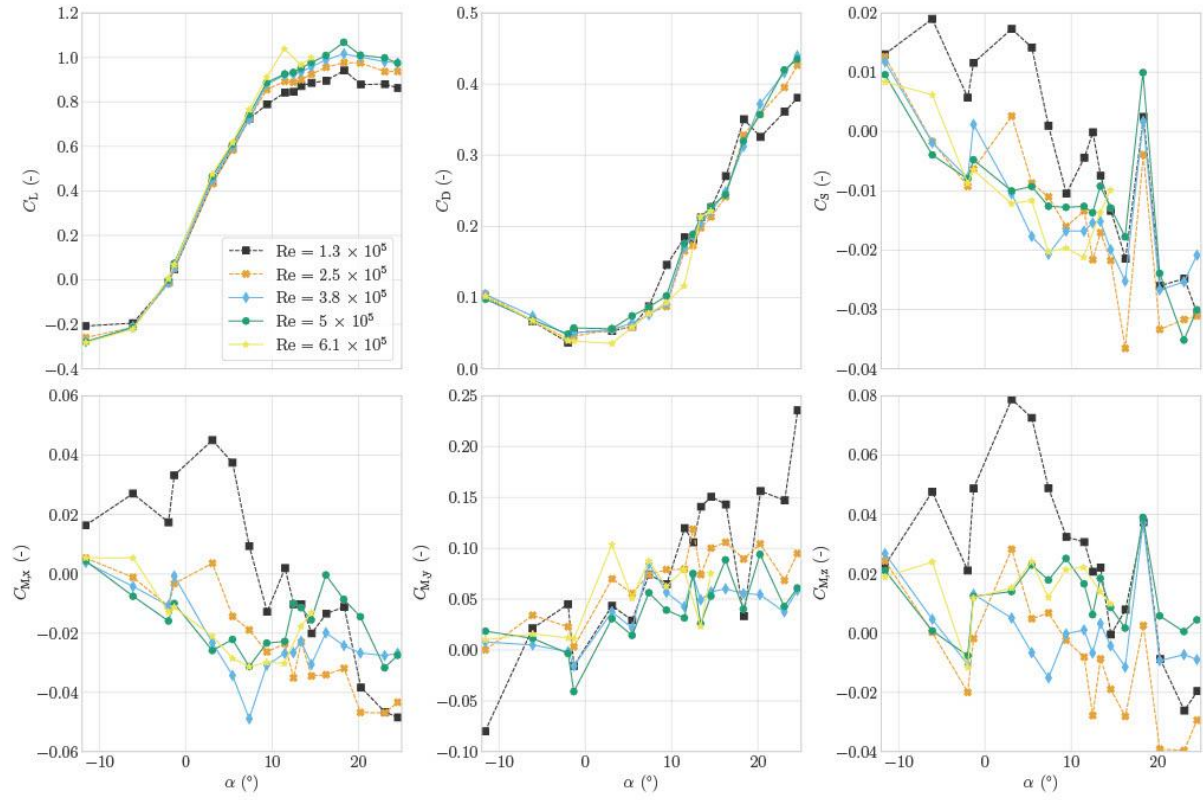


Fig9\_re\_variation\_beta\_sweep\_at\_fixed\_alpha.pdf

Comment: Figure 9 in the manuscript.

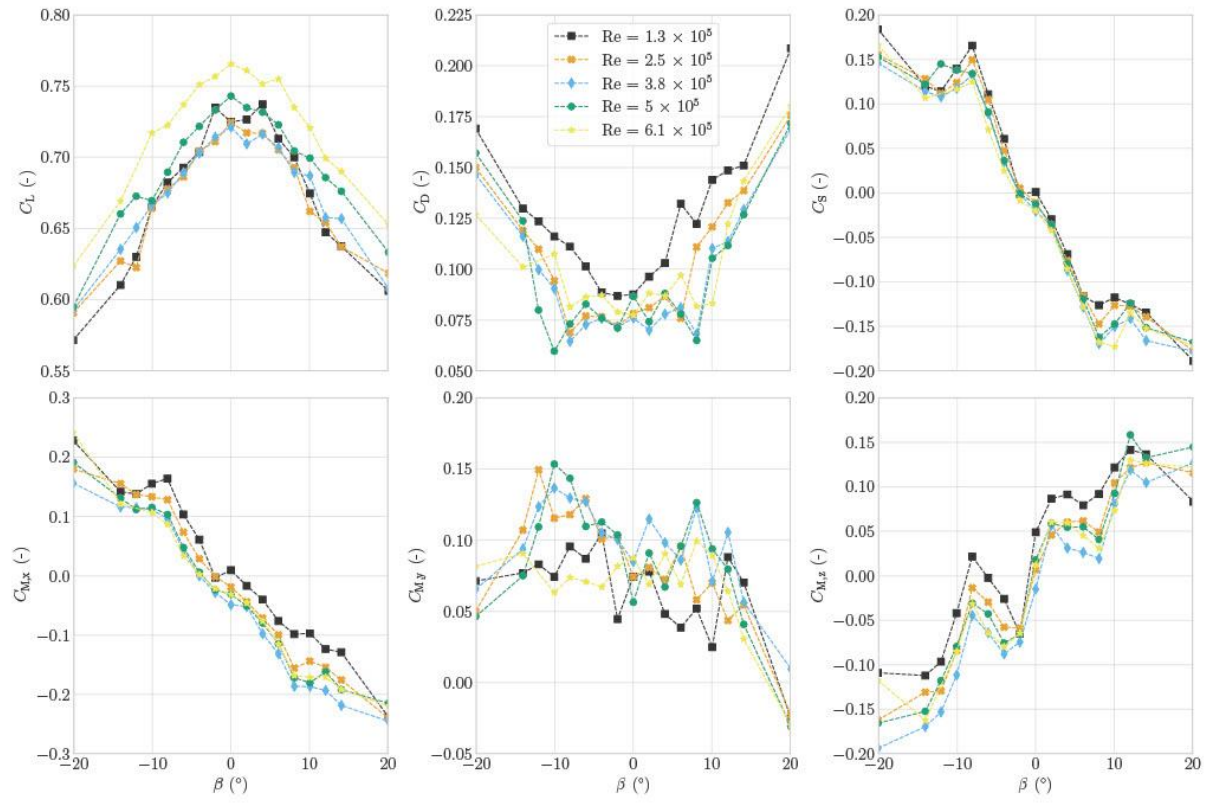




Fig10\_polars\_alpha.pdf

Comment: Figure 10 in the manuscript.

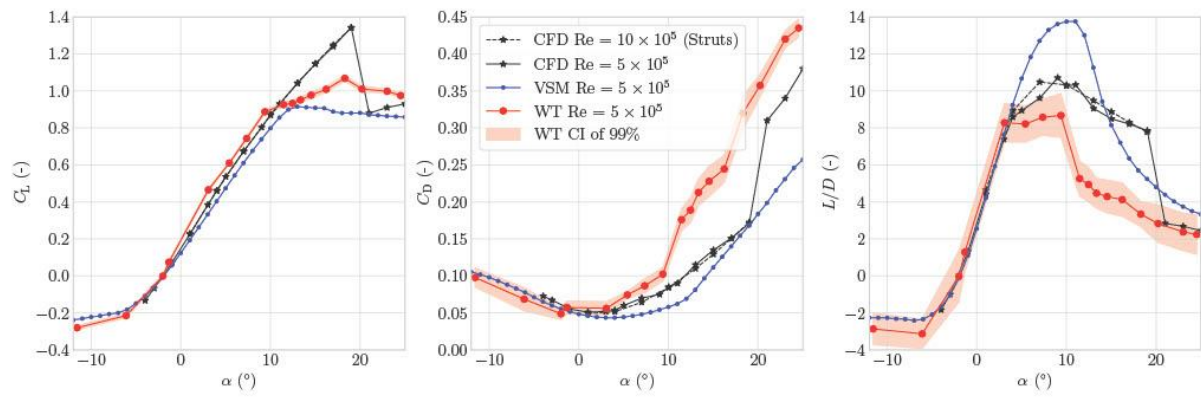


Fig11\_polars\_beta\_double\_alpha.pdf

Comment: Figure 11 in the manuscript.

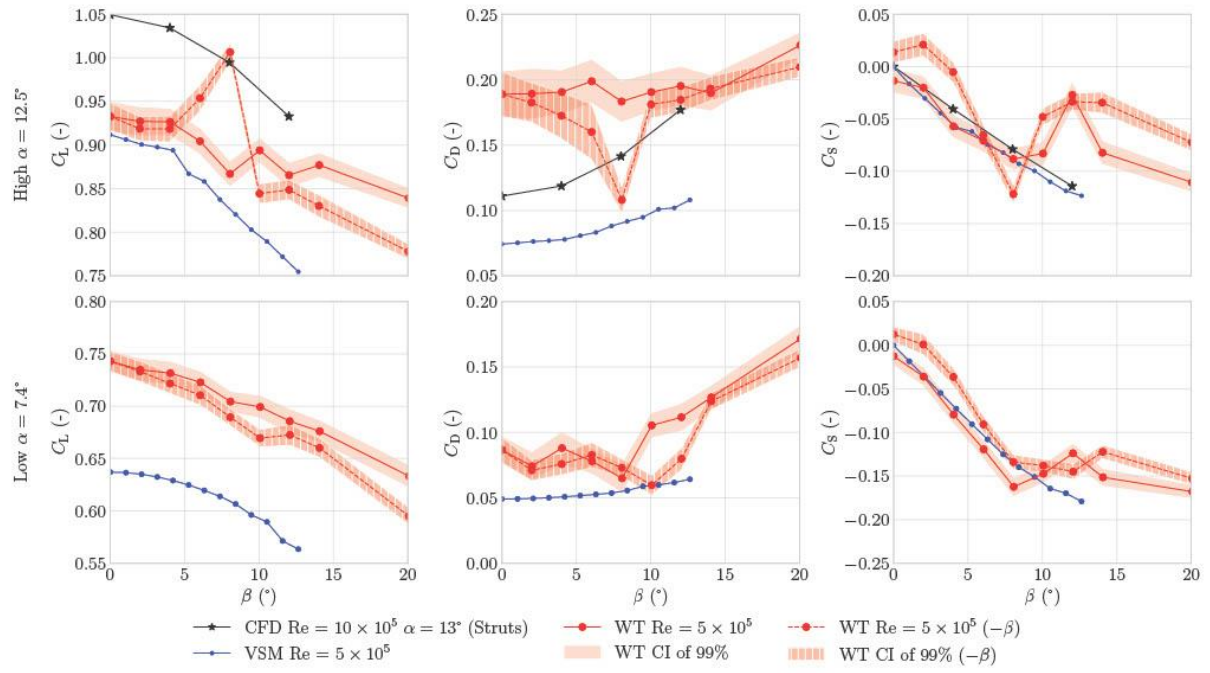


Fig12\_moment\_polar\_alphas.pdf

Comment: Figure 12 in the manuscript.

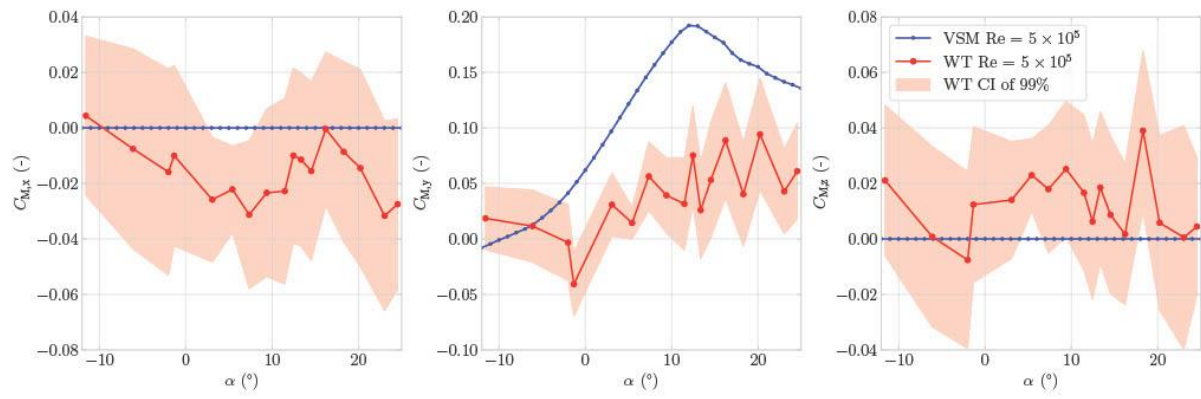
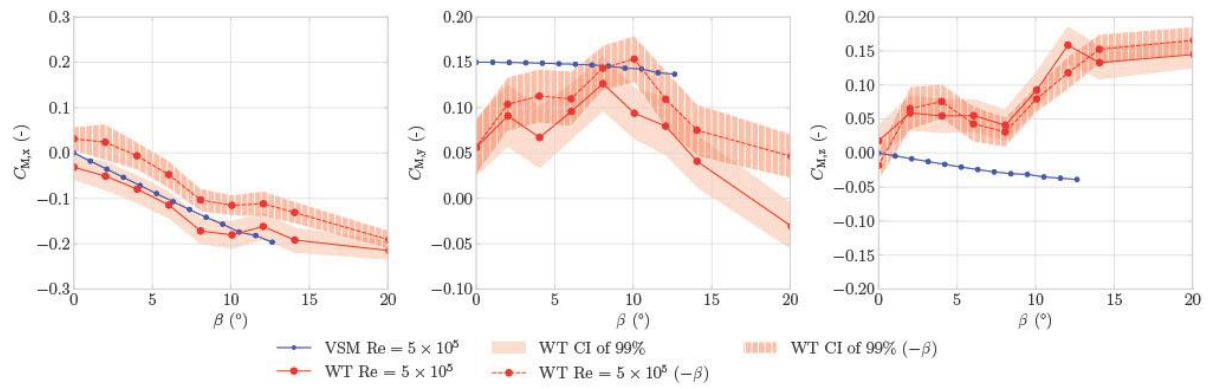


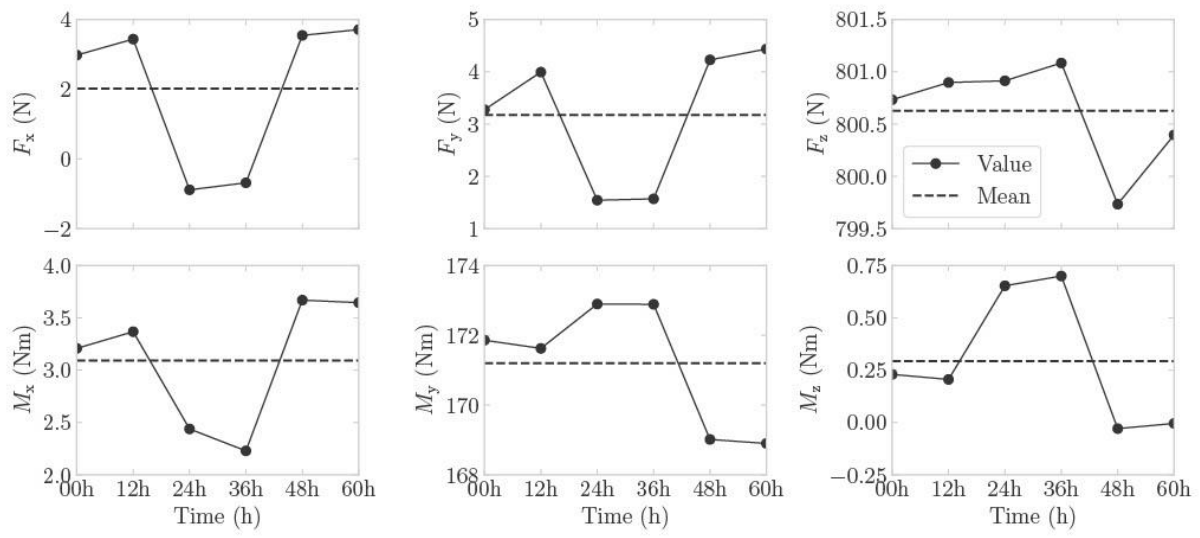
Fig13\_moment\_polars\_beta\_low\_alpha.pdf

Comment: Figure 13 in the manuscript.



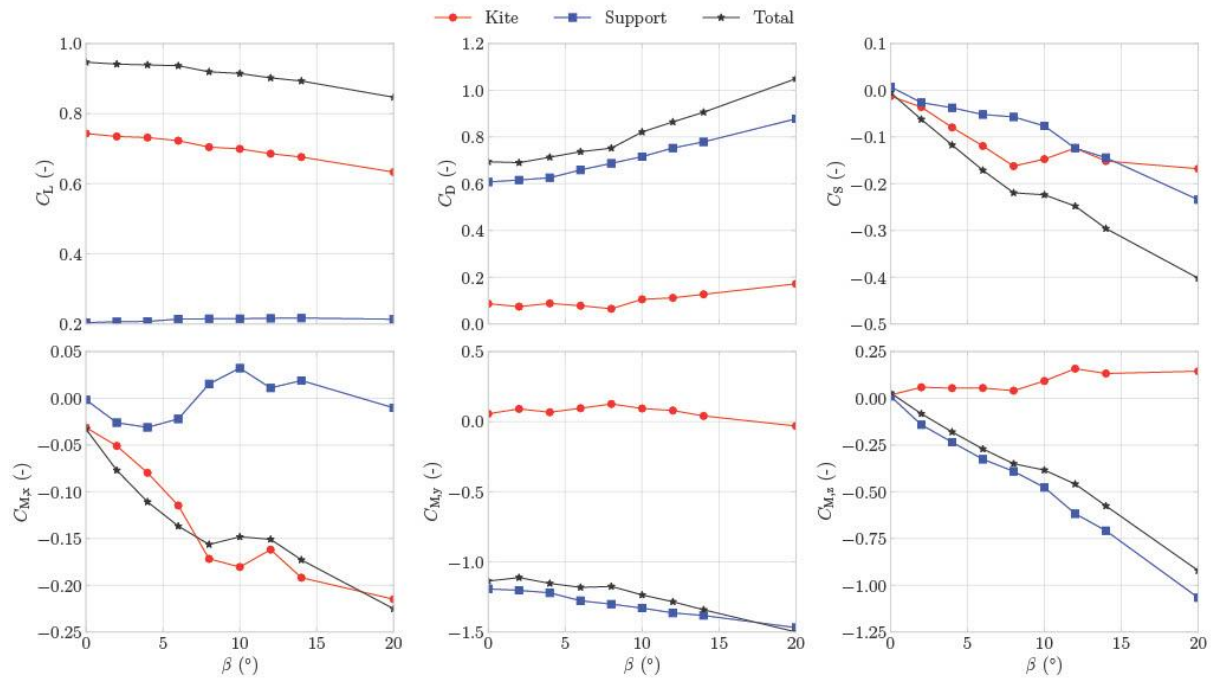
FigB1\_sensor\_drift.pdf

Comment: Figure B1 in the manuscript.



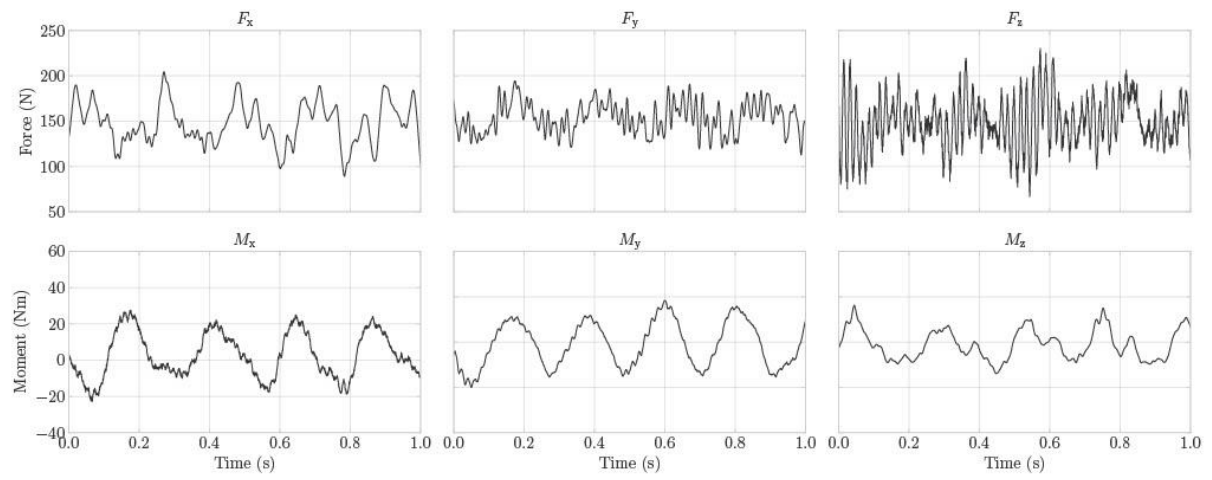
FigC1\_total\_support\_structure.pdf

Comment: Figure C1 in the manuscript.



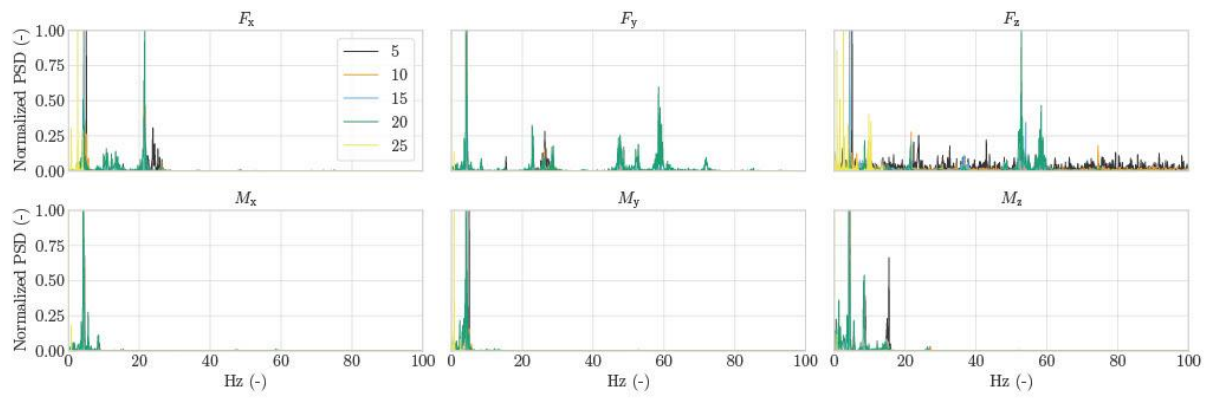
FigD1\_time\_series\_plot.pdf

Comment: Figure D1 in the manuscript.



FigD2\_PSD\_100Hz.pdf

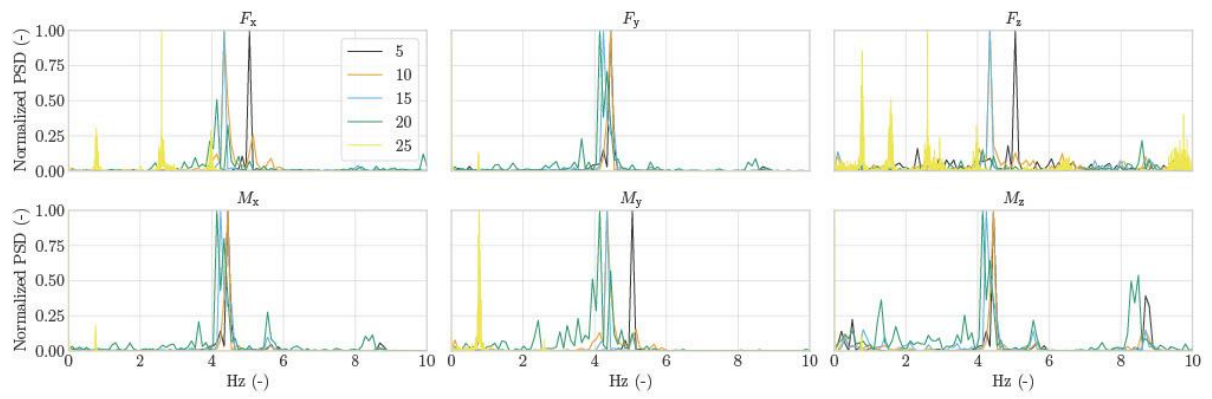
Comment: Figure D2 in the manuscript.





FigD3\_PSD\_10Hz.pdf

Comment: Figure D3 in the manuscript.



# Acknowledgements

This CODECHECK was done as part of the Reproducibility Check initiative led by TU Delft's [Digital Competence Centre](#).

# Citing this document

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# About CODECHECK

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