Verification and Analysis of Framework for Wind Turbine Design

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INTRO

As offshore wind turbines become more and more complex, we need effective and verified simulation and design programs to maximize renewable energy production.

METHODS

1. Became familiar with OpenTurbineCoDe, open-source wind turbine simulation and design optimization software
2. Ran simulations of wind turbine aerodynamics, structures
3. Performed experiments to verify general shape of program's predictions.

RESULTS

OpenTurbineCoDe simulations have same shape as experimental results

DISCUSSION

Further research: Verification of OpenTurbineCoDe's Control Co-Design module

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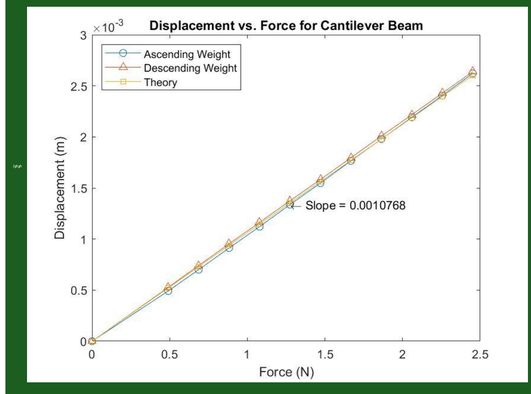
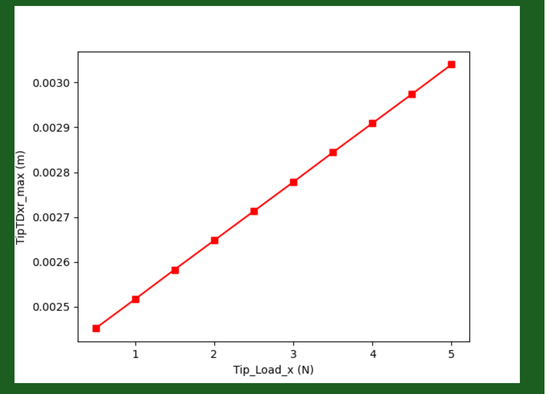
Key Findings:

OpenTurbineCoDe simulations match experiments



Experimental



Simulation

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