Rotational Speed Control of Floating Wind Turbines

CA9

Martin Højlund Therkildsen

Technical Faculty of IT and Design
Department of Control and Automation
Frederik Bajers Vej 7C
9220 Aalborg East
Email: mtherk21@student.aau.dk

Supervisors
Torben Knudsen

Contacts at Vestas
Sune Baun Christensen
Jesper Sandberg Thomsen

Abstract

This project documents the multiple-inputs-multiple-outputs (MIMO) controller design of a reefer trailer refrigeration system.. and so on!

CONTENTS

1 INTRODUCTION

In 2015 the United Nations set up the 17 Sustainable Development Goals. These outline global political actions that must be taken to achieve a better and more sustainable future for all. Each Goal describes a political, economical, social.. xxx

1.1 Problem definition

2 System Description

This is a text [1]

3 Modeling

3.1 Component Models

4 Controller Design

5 CONCLUSION

The underlying physics of a trailer refrigeration system are complex, as several components of the system require extensive modeling to accurately represent reality. xxx

6 FUTURE WORK

REFERENCES

[1] Kresten K. Sørensen, Jakob Stoustrup, and Thomas Bak. Adaptive MPC for a reefer container. *Control Engineering Practice*, 44:55–64, 2015.

7 APPENDIX

7.1 Link to GitHub Repository

https://github.com/kasperlaustsen/CA8_Project.git

7.2 Explanation of relevant terms for thermodynamics

7.2.1 Enthalpy

Enthalpy is an energy term that is defined as the sum of the flow work.. xx

$$h = u + pv \tag{7.1}$$

7.2.2 Internal energy

The internal energy of a mass can be viewed as primarily.. xx

7.3 List of table lookup symbols

7.4 Linearity of cargo heat transfer coefficient

In order to represent the uncertainty of the cargo coefficient and thus enabling the check for robustness, it is required to show that the linearised system model is linear in UA_{cargo} .. xx

8 DOCUMENTATION AND TESTS

8.1 Test Journal: Evaporator component model

Executed by: xxx
Date: xx/xx/2022

8.1.1 Objective

This test aims to document the behavior of the evaporator model with two distinct changes xx..

8.1.2 Background

8.1.3 Test subject

8.1.4 Equipment used

The outputs from a simulation of ”eTRU_prototype_2_old_perhabs_with_measurements.slx” are used as inputs for the test xxx..

8.1.5 Test setup

8.1.6 Test procedure

8.1.7 Results and Comments

8.1.8 Sources of error and insecurities