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Tokamak Magnetic Control Simulation: Applications for JT60-SA and ISTTOK Operation.

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ABSTRACT

The characterisation of the interactions

Keywords: Plasma-surface interactions, Liquid-metals, Tin, Deuterium retention, Spectroscopy

RESUMO

A caracterização das interações entre plasmas magneticamente

Palavras-chave: Plasma, metais líquidos, estanho, retenção de deutério, espectroscopia

SOMMARIO

Il soggetto del presente lavoro di tesi è la caratterizzazione dell'interazione tra la superficie di metallo liquido

Parole chiave: Interazione plasma-parete, Metalli liquidi, Stagno, Ritenzione del Deuterio, Spettroscopia

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CONTENTS

1	INTRODUCTION	3
1.1	Tokamak plasma control	3
1.2	Behind the plasma current	3
1.3	Thesis outline	3
2	PLASMA CONTROL SYSTEMS	5
2.1	Overview of control systems	5
2.2	MARTe framework	5
2.2.1	MARTe architecture	5
2.2.2	Hardware containers	5
2.2.3	MARTe 2.0	5
2.3	Equilibrium and control algorithms	5
2.3.1	PID control	5
2.3.2	Multiple-Input Multiple-Output control	5
3	JT60-SA CONTROL DESIGN	7
3.1	Machine description	7
3.2	CREATE tools	7
3.3	Controller designs	7
3.4	QST tools implementation	7
3.5	Simulation results	7
4	ISTTOK	9
4.1	Machine description	9
4.2	Diagnostics and Actuators	9
4.3	ATCA-MIMO-ISOL boards	9
4.3.1	Hardware layout	9
4.3.2	Real-time integration software	9
4.4	Retrieving the contribution of plasma current	9
4.5	Plasma centroid position determination	9
5	ISTTOK RESULTS	11
5.1	General Application Modules implementations	11
5.2	PID control implementation	11
5.3	Multiple-Input Multiple-Output control implementation	11
6	CONCLUSIONS	13

Contents

Bibliography 23

A DEMONSTRATIONS 25

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATIONS

@TODO: Review variable lists as writing the thesis

- AC - Alternating Current
- ADC - Analog to Digital Converter
- DAC - Digital to Analog Converter
- DC - Direct Current
- GUI - Graphical User Interface
- HV - High Voltage
- IO - Input Output
- IST - Instituto Superior T cnico

LIST OF VARIABLES

@TODO: Review variable lists as writing the thesis

VARIABLES:

- k - Boltzmann constant
- V_b - breakdown voltage
- j_{sat}^+ - current density
- n - density of the plasma
- $E_{breakdown}$ - electrical breakdown field
- E - electrical field
- e - electron charge
- V_f - floating potential
- γ - flow constant
- d - gap distance
- i_{sat}^+ - ion saturation current
- c_s - ion sound speed
- m - mass
- Γ - particle flux density
- ϵ_0 permittivity of vacuum

- V_p - plasma potential
- p - pressure
- V_s - probe voltage
- v_{se} - speed at the sheath edge
- A_s - surface of the probe
- T - temperature
- α - Townsend parameter

INDEXES:

- e - electron
- i - ion
- l - left
- lw - left wall
- r - right
- rw - right wall
- se - sheath edge
- sf - sheath floating

INTRODUCTION

1.1 TOKAMAK PLASMA CONTROL

1.2 BEHIND THE PLASMA CURRENT

1.3 THESIS OUTLINE

PLASMA CONTROL SYSTEMS

2.1 OVERVIEW OF CONTROL SYSTEMS

2.2 MARTE FRAMEWORK

2.2.1 *MARTE architecture*

2.2.2 *Hardware containers*

2.2.3 *MARTE 2.0*

2.3 EQUILIBRIUM AND CONTROL ALGORITHMS

2.3.1 *PID control*

2.3.2 *Multiple-Input Multiple-Output control*

JT60-SA CONTROL DESIGN

3.1 MACHINE DESCRIPTION

3.2 CREATE TOOLS

3.3 CONTROLLER DESIGNS

3.4 QST TOOLS IMPLEMENTATION

3.5 SIMULATION RESULTS

ISTTOK

4.1 MACHINE DESCRIPTION

4.2 DIAGNOSTICS AND ACTUATORS

4.3 ATCA-MIMO-ISOL BOARDS

4.3.1 *Hardware layout*

4.3.2 *Real-time integration software*

4.4 RETRIEVING THE CONTRIBUTION OF PLASMA CURRENT

4.5 PLASMA CENTROID POSITION DETERMINATION

ISTTOK RESULTS

5.1 GENERAL APPLICATION MODULES IMPLEMENTATIONS

5.2 PID CONTROL IMPLEMENTATION

5.3 MULTIPLE-INPUT MULTIPLE-OUTPUT CONTROL IMPLEMENTATION

6

CONCLUSIONS

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DEMONSTRATIONS
