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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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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

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DEMONSTRATIONS
