1 Report

by Gullik Vetvik Killie, Add yourself

Abstract

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

1.1 Introduction

- State of the art
- Why are we doing this
- What is being done
- Aims of report/study (want to see if)

We are using something to prove something!!!

1.2 Theory

1.3 Numerical Methods

- Short PiC (EMSES) explanation
- Experimental set up
-

1.4 Results

- Comparison of cases with P-E and without
- Acc of charges at probes + ϕ, diff flows and α
- ϕ num vs ana

1.4.1 Induced electric current

The plasma is flowing in in relation to the coordinate system in the simulations. Due to this an induced electrical field, ε, will appear. To analyze the potential we want to correct for this potential field. The induced electrical field will neutralize the Lorentz force. Combined with the electrostatic approximation we can obtain the ε

$$\vec{\varepsilon} = \vec{v_D} \times \vec{B} \tag{1.1}$$

$$\int E dx = -\phi \tag{1.2}$$

$$\phi = -\int \vec{v}_d \times \vec{B} \approx -\int (41600\text{m/s} \cdot 50E - 6\text{T})\, dx \tag{1.3}$$

$$\phi = 2.08\text{x} \tag{1.4}$$

1.5 Discussion

1.6 Conclusions

- Proposal for further studies (Probably see if photoemmision is relevant in tenous plasma (MEO CASE, magnetospheric tail lobes))