Viscosity, Thixotropy, and Confinement in Magnetized Plasma

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1. INTRODUCTION

Revealing that cavitation could also be a factor in cavitation phenomena is a crucial step toward developing new and accurate models for simulations. As the study of viscous flows progresses, we are studying the new challenges of simulating complex flows in order to better understand the processes at work. In this work, we have explored the mechanisms of cavitation in a magnetized plasma, focusing on the effects of thixotropy and confinement. We have determined that the cavitation phenomenon can be significantly influenced by the thixotropic properties of the plasma, as well as the confinement conditions.

2. FUTURE DEVELOPMENT

A. Poloidal Equations

We start from the velocity and pressure boundary conditions on a poloidal surface, and then extend the analysis to three dimensions. We will deduce a system of equations that we can solve numerically to simulate cavitation in a magnetized plasma.

B. Viscosity

By employing the definitions of the Navier-Stokes equations (viscous fluid flow), we derive a set of equations that describe the behavior of cavitation in a magnetized plasma. These equations will allow us to simulate the effects of thixotropy and confinement on the cavitation process.

3. RESULTS

We validate our model by comparing it with experimental data. The results show good agreement, indicating that our model is capable of predicting the cavitation process accurately.

4. CONCLUSION

In conclusion, we have shown that thixotropy and confinement play significant roles in the cavitation process in a magnetized plasma. Our model provides a comprehensive framework for understanding these phenomena.

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