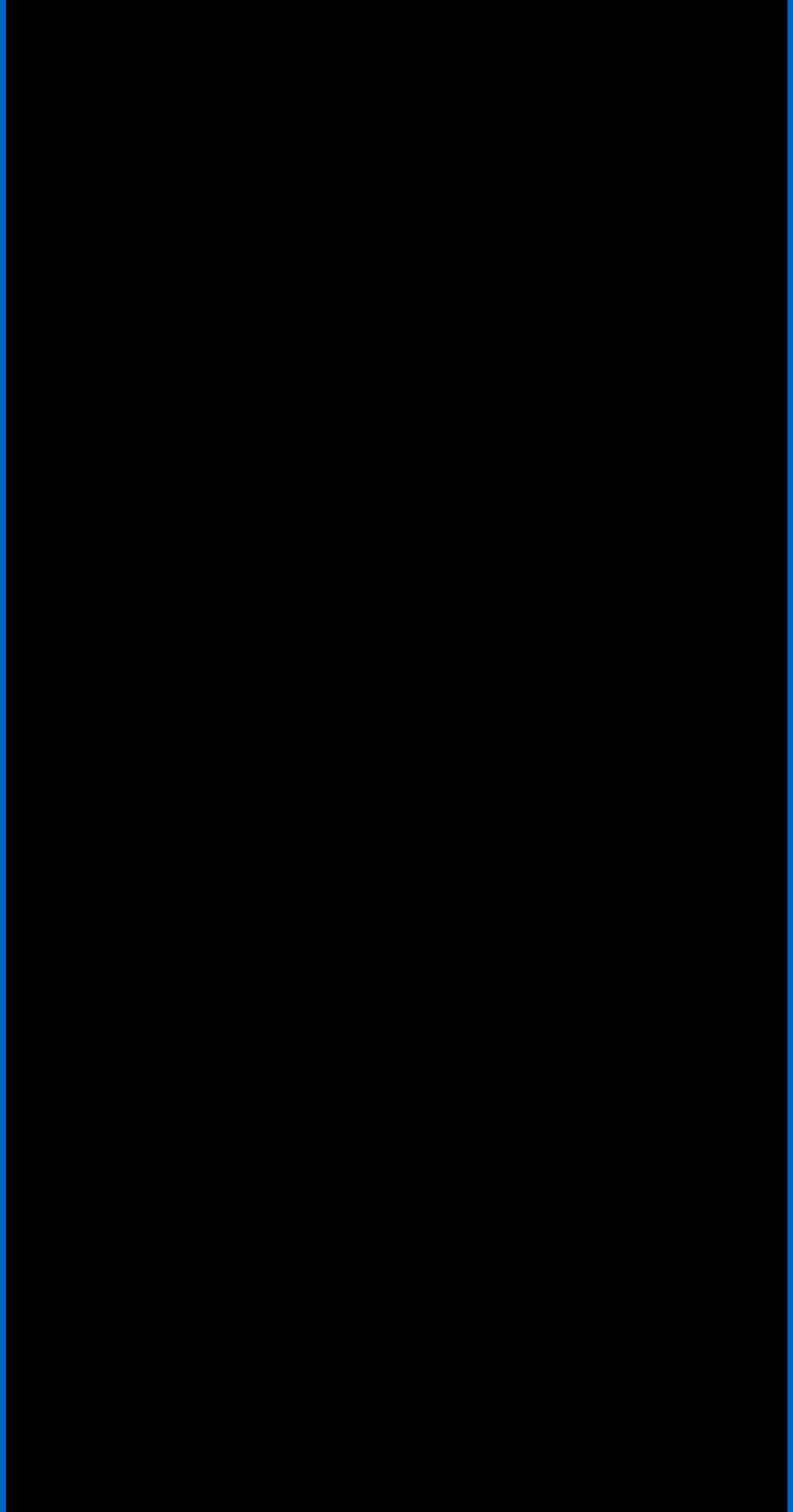
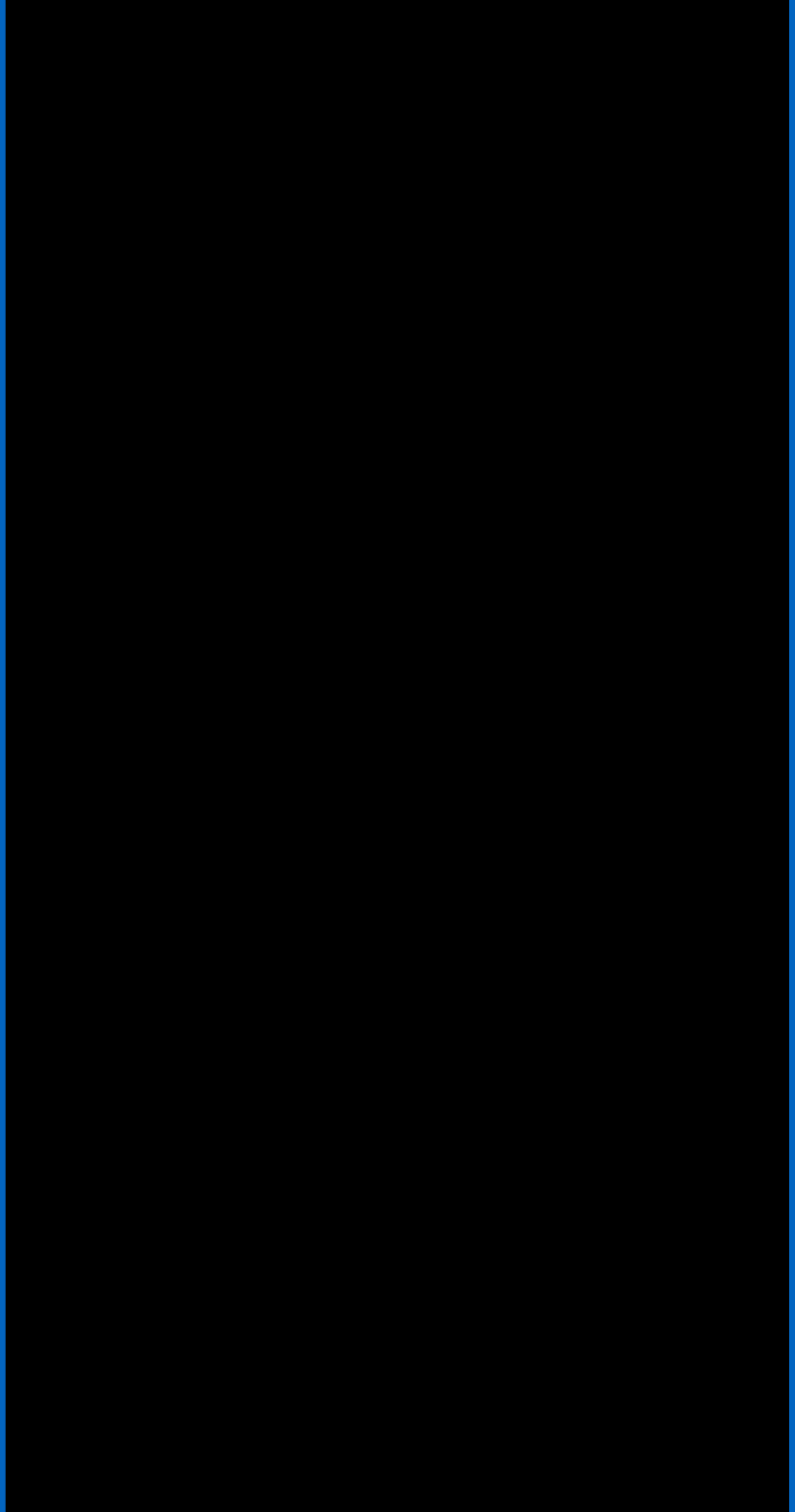


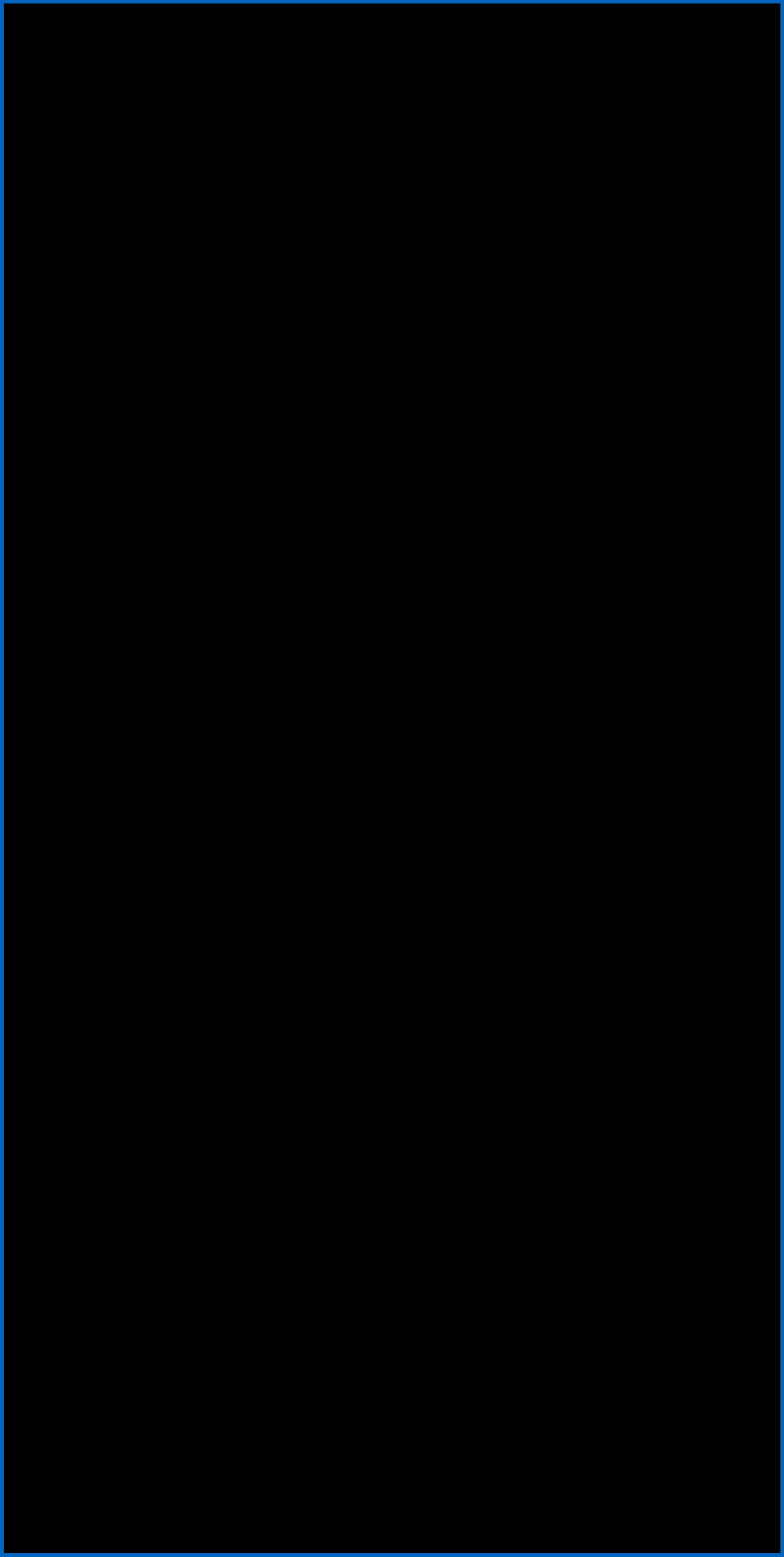
Boundary conditions



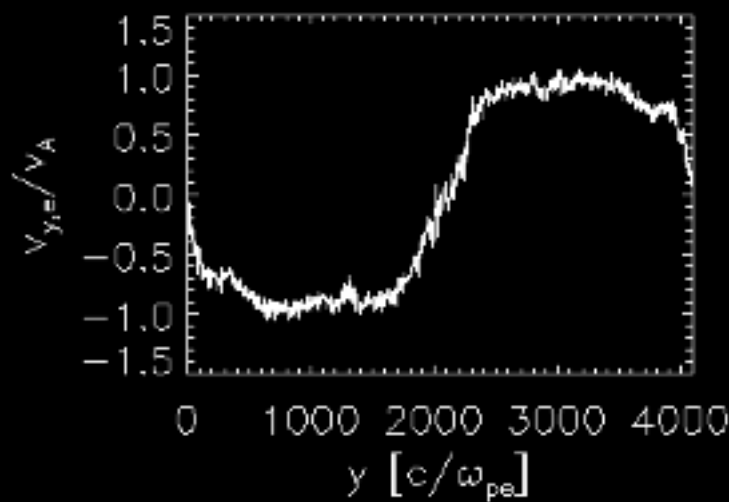
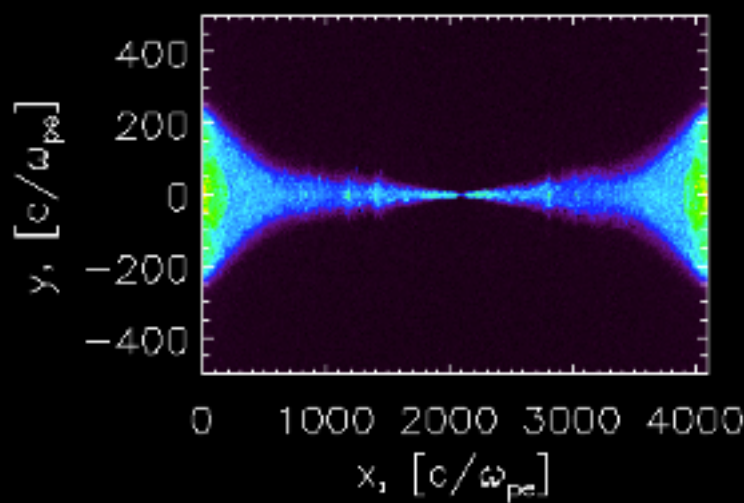
Adaptive



Outflow



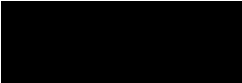
Periodic

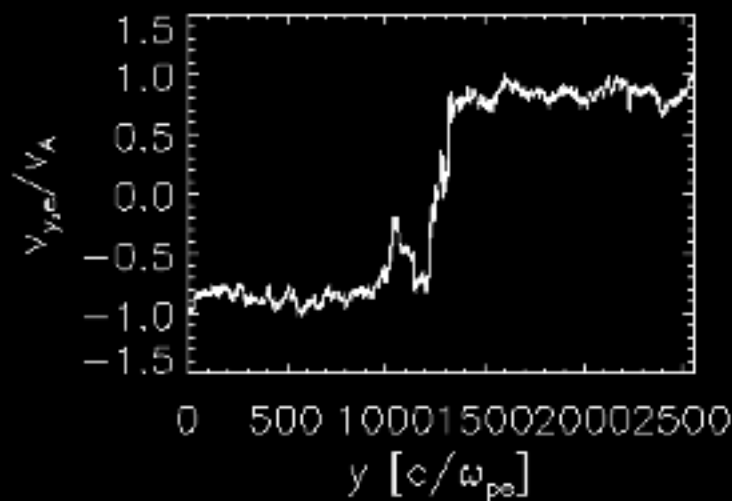
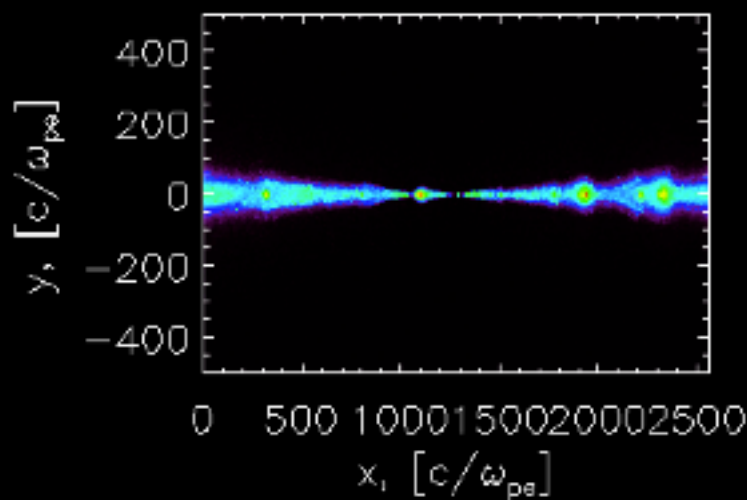










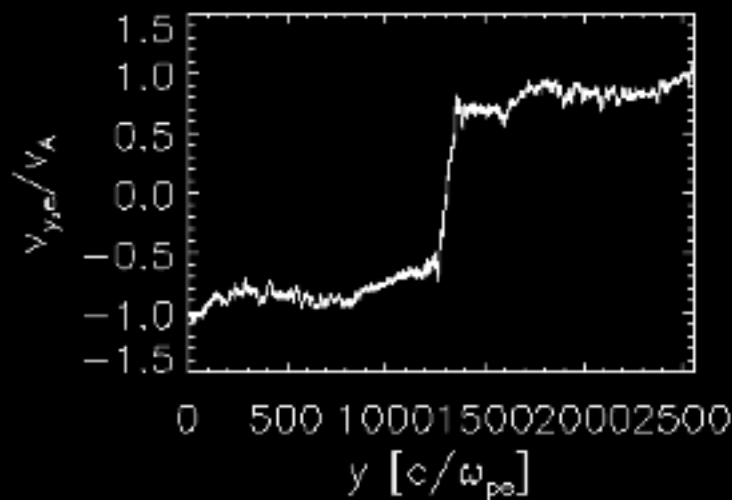
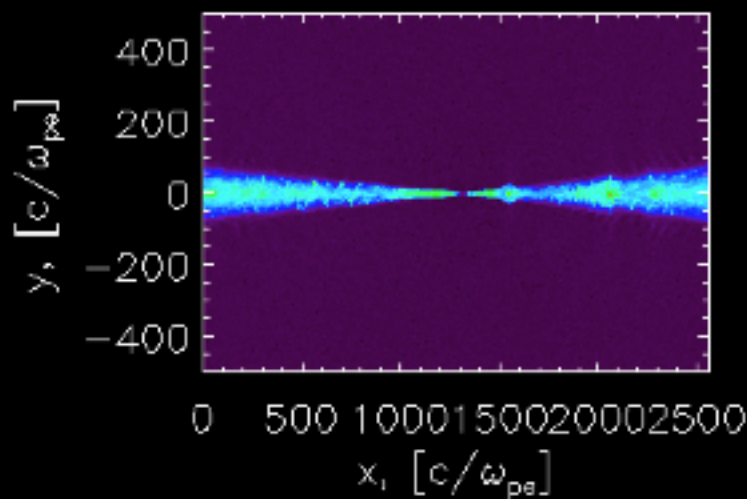








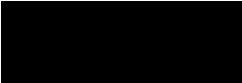


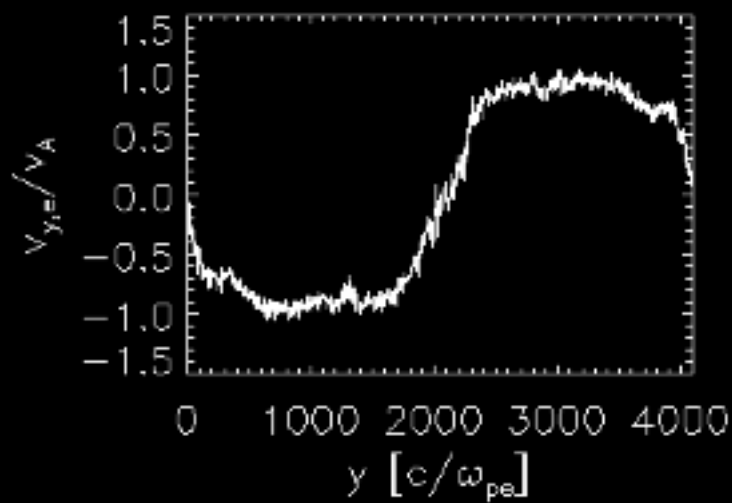
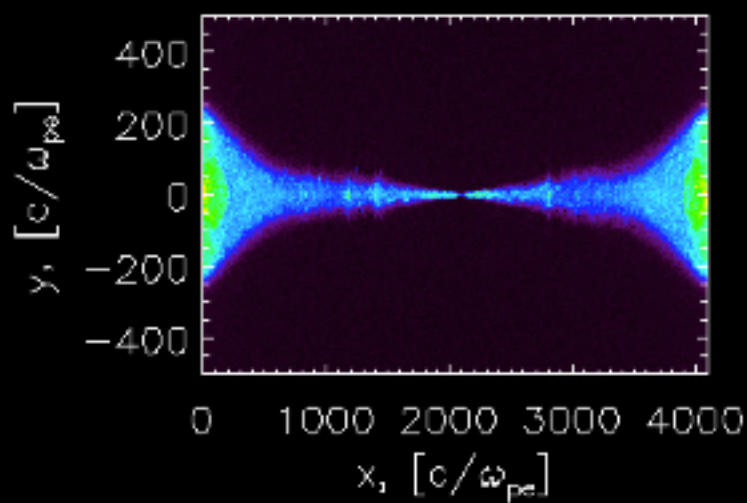


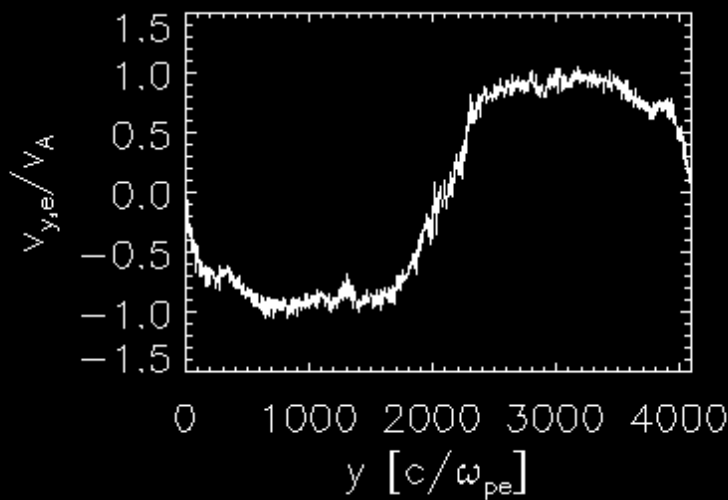
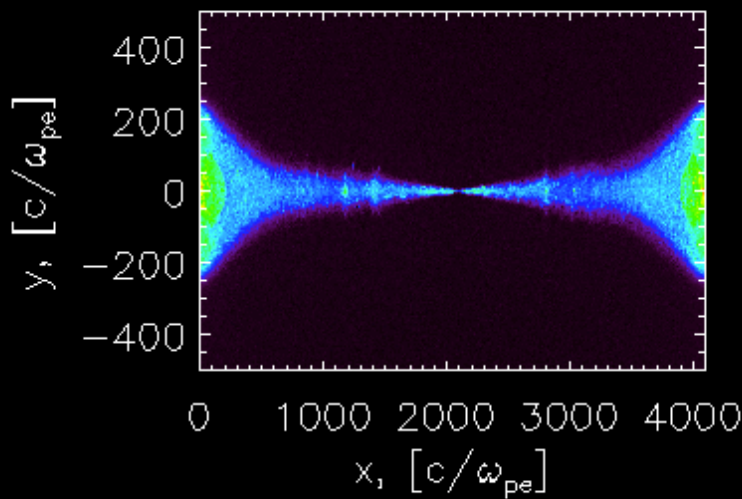


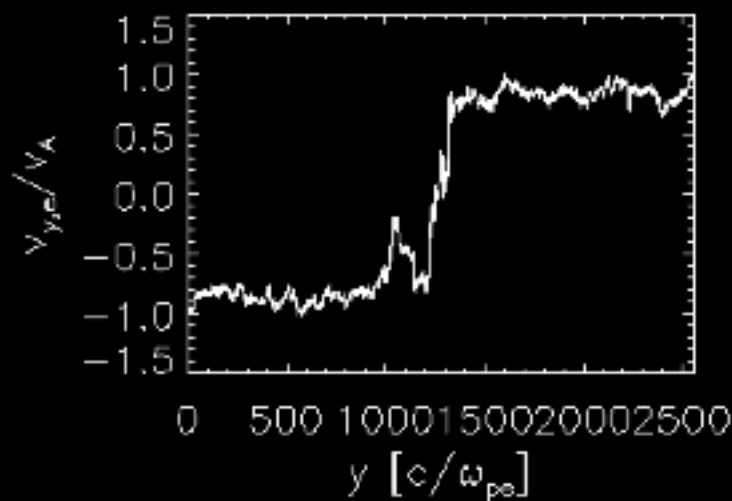
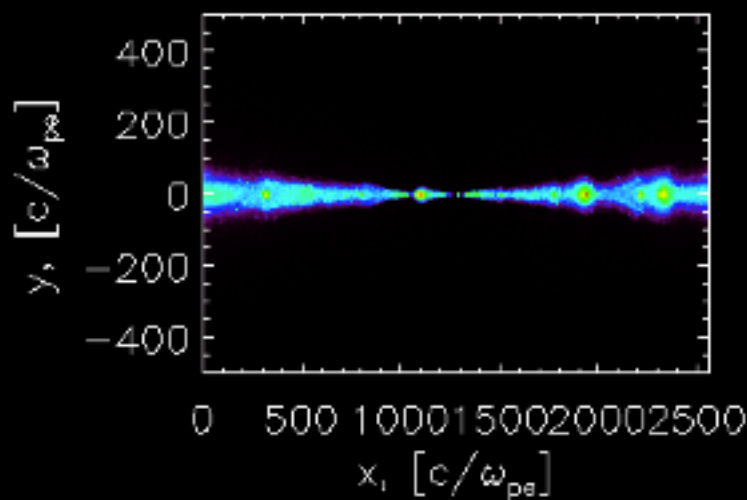


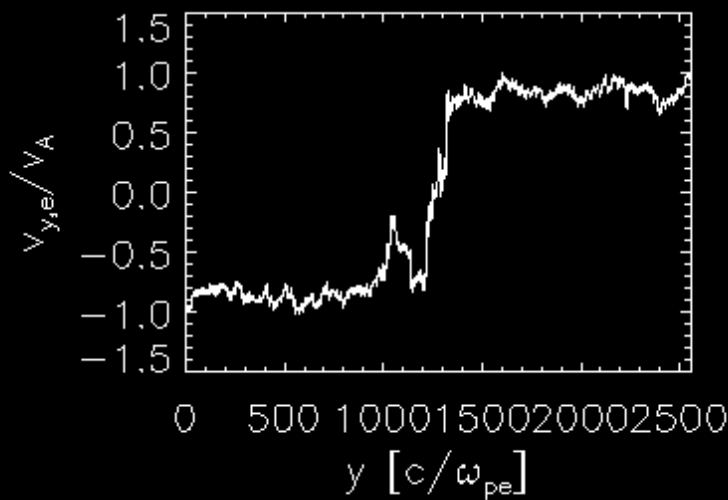
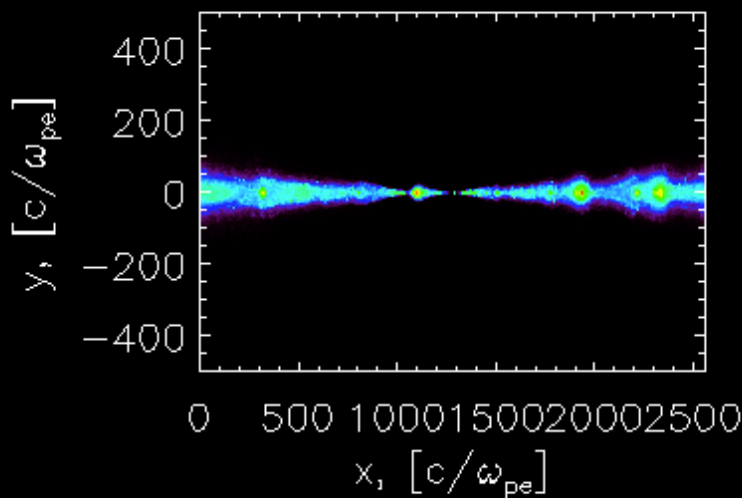








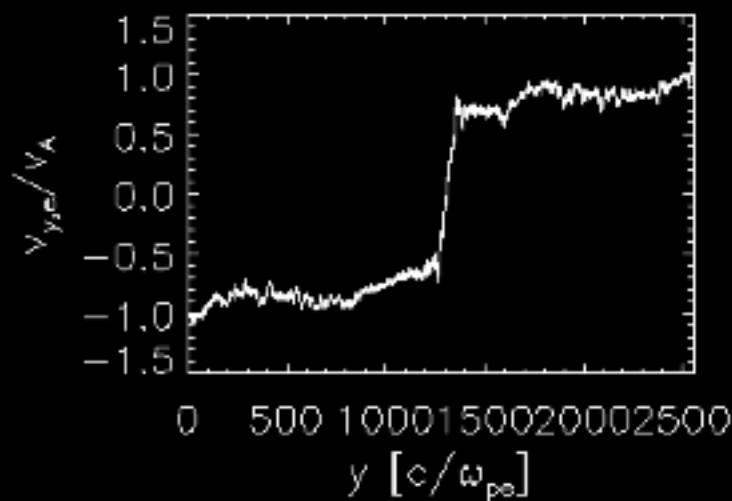
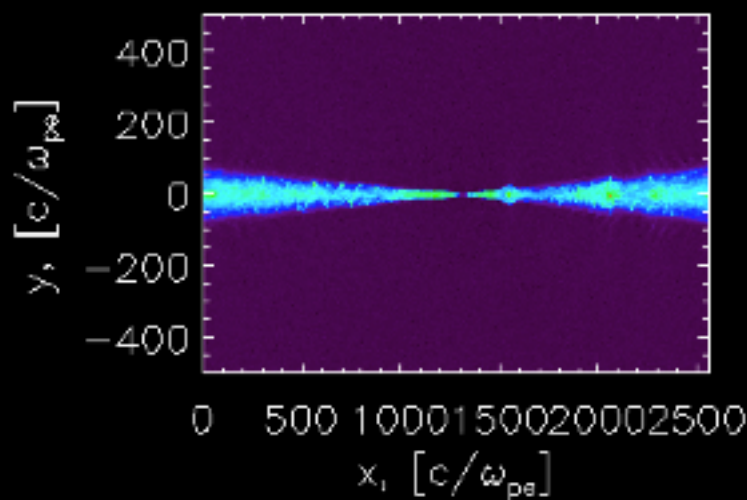


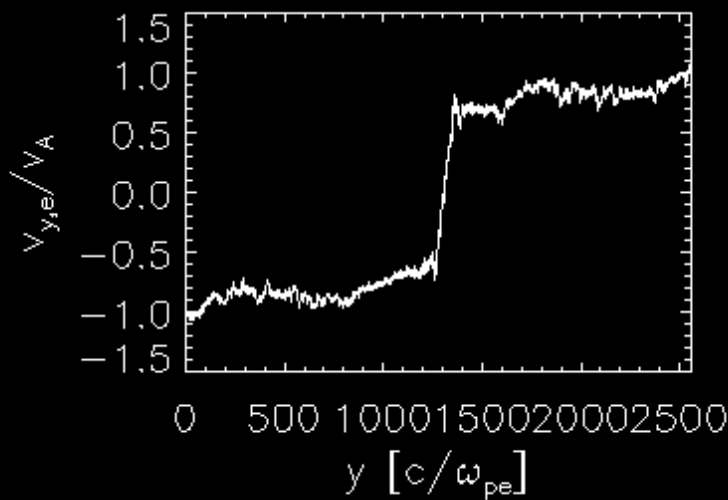
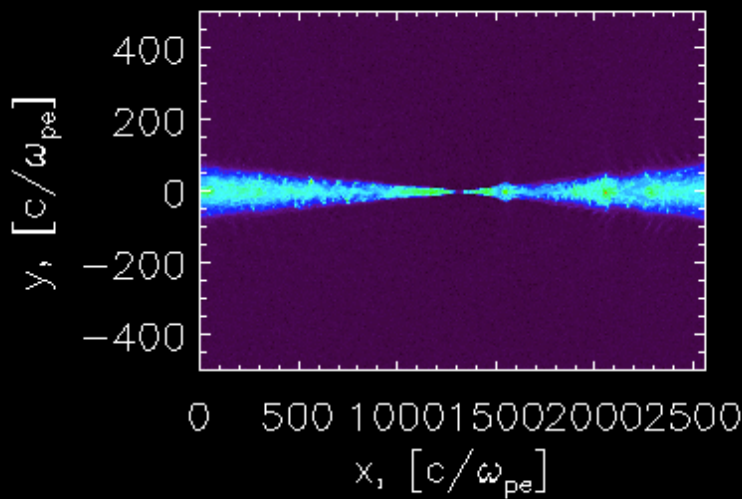


The first part of the paper discusses the importance of understanding the underlying mechanisms of the observed phenomena. This is followed by a detailed analysis of the data, which reveals several key findings. The results indicate that the proposed model is highly effective in capturing the essential features of the system under study. Furthermore, the analysis shows that the model's performance is robust across different parameter settings and data distributions. The final section of the paper concludes with a summary of the findings and suggests directions for future research.

The second part of the paper focuses on the theoretical aspects of the problem. It begins by defining the key concepts and terms used throughout the study. This is followed by a rigorous proof of the main theorem, which establishes the validity of the proposed model. The proof is based on a series of lemmas and propositions, which are carefully derived and verified. The final part of the section discusses the implications of the results and their potential applications in various fields.

The third part of the paper presents a comprehensive evaluation of the model's performance. This is done through a series of experiments and simulations, which are designed to test the model's ability to handle different types of data and to maintain its performance over time. The results of these experiments are presented in a clear and concise manner, allowing the reader to easily understand the model's strengths and weaknesses. The final part of the section discusses the practical implications of the findings and suggests ways to improve the model's performance.

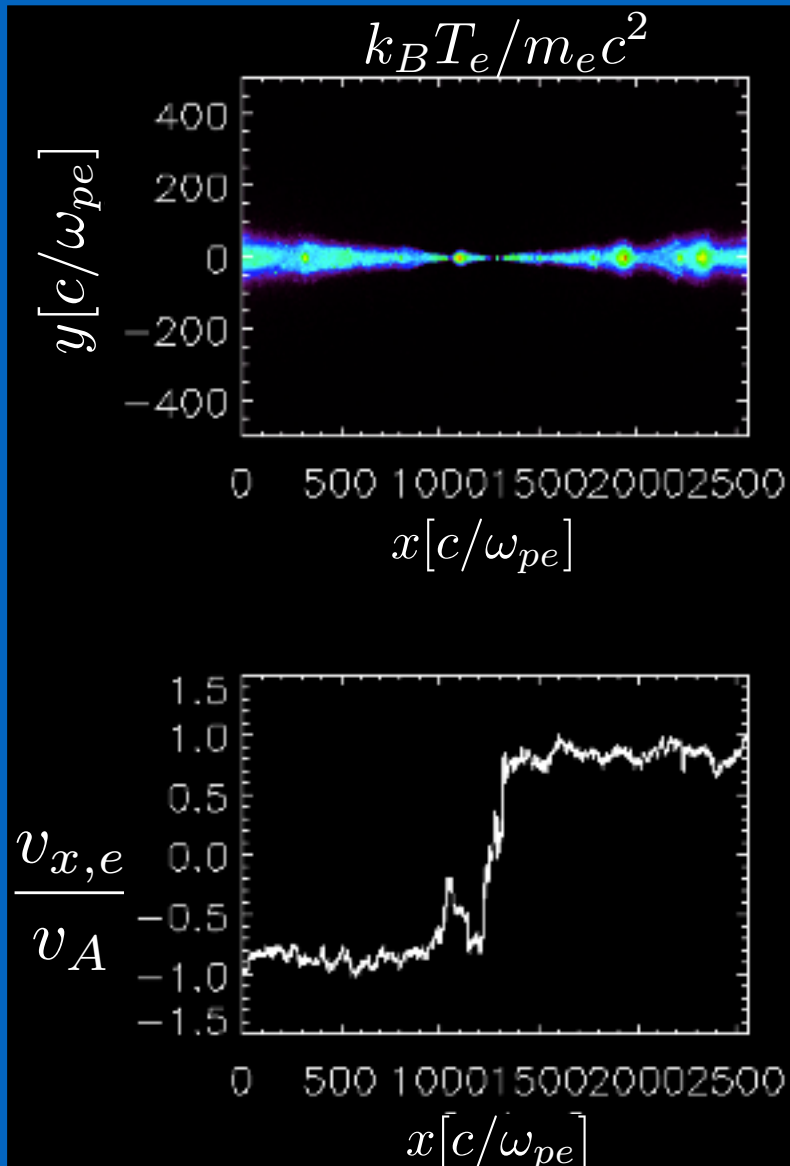




Boundary conditions

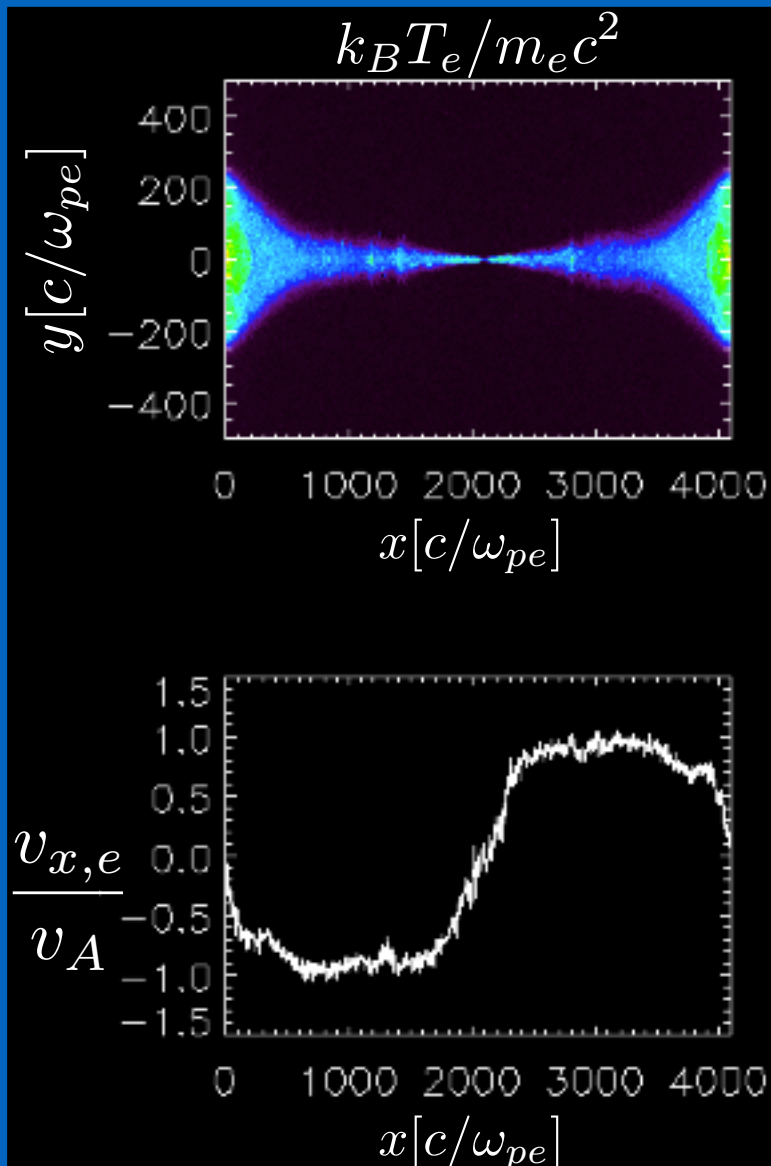
Outflow

- ▶ Particles escape along x-dir.
- ▶ Allows for study of long-term evolution of system



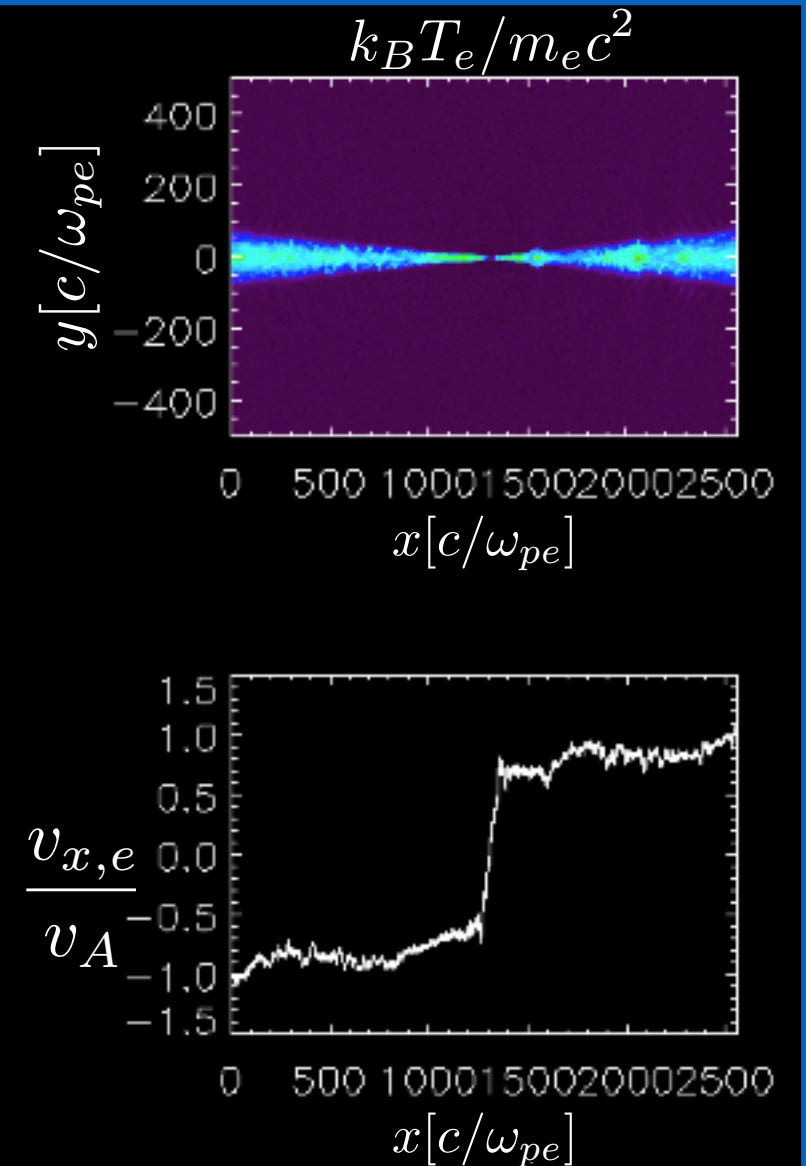
Periodic

- ▶ No particles are lost
- ▶ However, sensitive to boundaries after $1/2$ Alfvén crossing-time



Adaptive

- ▶ Modified version of outflow boundary condition
- ▶ Includes additional controls necessary for high-beta case



The plasma reaches a quasi-steady state

- ▶ To extract a meaningful outflow temperature, temperature profile should be flat
- ▶ Alfvén velocity should be saturated in current sheet

Alfvén velocity

$$\frac{v_A}{c} = \sqrt{\frac{\sigma_w}{1 + \sigma_w}}$$

