Contribution ID: **58** Type: **Poster**

Development of mitigation system of vacuum breakdown using external magnetic fields

Thursday, November 14, 2024 1:00 PM (1h 30m)

This study focuses on the development of a system to mitigate vacuum breakdown in high-energy ion beam extraction systems using external magnetic fields. Vacuum breakdown tends to occur more frequently in environments where electric and magnetic fields coexist, presenting a significant challenge in accelerator technology. To address this issue, our research conducted both theoretical and experimental investigations to overcome the voltage limits associated with vacuum breakdown. During the second year of the project, we optimized electrode configurations and analyzed magnetic field distributions to control electron emission and movement, effectively suppressing vacuum breakdown. The outcomes of this research contribute to advancements in plasma applications and accelerator component development, with promising implications for various industrial applications.

Paper submission Plan

Best Presentation

Contribution track

ICABU WG1. Accelerator Systems

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