



Contribution ID: 175

Type: **Poster Presentation**

The analysis of electron and ion movement inside the Faraday cup and error generation for finding the best biasing configuration

Thursday, 12 September 2024 16:00 (1h 30m)

In this work, we analyze the movement of the electrons and ions inside a Faraday cup with different biasing of the collector cup, drift tube and suppressor ring. The possible error due to wrong biasing is also investigated. The particle pass is tracked in different biasing configurations. Also, the effect of stray electrons and ions, which are generated due to gas ionization along the beam pass, is studied. Through the analysis, we found the best biasing for the proposed configurations of the Faraday cup.

Footnotes

Funding Agency

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Yes

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Session Classification: THP: Thursday Poster Session

Track Classification: MC1: Beam Charge and Current Monitors