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Beam delivery of high-energy ion beams for irradiation experiments at the CERN Proton Synchrotron

Monday, 8 May 2023 16:30 (2 hours)

Heavy-ion single event effect (SEE) test facilities are critical in the development of microelectronic components that will be exposed to the ionizing particles present in the hostile environment of space. CHARM High-energy Ions for Micro Electronics Reliability Assurance (CHIMERA) and HEARTS have developed a high-energy ion beam capable of scanning a wide range of Linear Energy Transfer (LET) at low intensities to study ionization effects on space-bound technology using CERN's Proton Synchrotron (PS). This contribution describes the extraction and transport of low-intensity lead ions at multiple energies to the CHARM facility at the East Area of CERN. Furthermore, it discusses the implementation of a Radio Frequency Knock-out (RFKO) technique that streamlines beam extraction and enhances particle flux control and reproducibility across different energies, thereby improving performance and reliability in SEE testing.

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Footnotes

I have read and accept the Privacy Policy Statement

Yes

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