Contribution ID: **44** Type: **Poster**

Numerical Study on the Effect of Scanning Strategy on Beam Uniformity and Target Temperature Field for AB-BNCT

Tuesday, 25 February 2025 16:30 (1 minute)

This paper investigates the beam spot uniformity on a lithium target under different scanning strategies during proton bombardment by using numerical method.In addition, the temperature changes and temperature field distribution on the target surface during proton bombardment were calculated based on the distribution of beam.Revealing that a sawtooth wave motion was revealed to achieves have the best uniformity and results in lower maximum target surface temperatures compared to sinusoidal and triangular wave patterns. These insights contribute to optimizing the beam homogenization for AB-BNCT target systems, potentially improving cooling design and target performance.

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Funding Agency

National Natural Science Foundation of China

Abstract classification - track type

Applications

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Session Classification: Poster Session 1