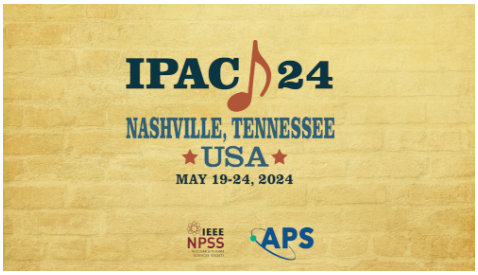

Contribution ID: **1300** Contribution code: **TUPR81** Type: **Poster Presentation**

Simulation study of a 300 keV positive ion linac for D and T fusion

Tuesday, 21 May 2024 16:00 (2 hours)

An 870 mA CW positive ion source and linac is being developed to produce Mo-99 using neutrons from a fusion of deuterium and tritium. The project will be situated at the ENEA Sorgentina Laboratory at Brasimone, Italy. The beam line consists of an ion source, multi-aperture extraction system and a 300 keV electrostatic accelerator. The multi-aperture extraction system is designed with each aperture oriented so that each beamlet meets at a common focal point. The beam distribution at the target should be wide with a reasonably high degree of uniformity. A particle tracking simulation study using the G4beamline program with electric field distributions in the extractor and accelerator that are calculated in COMSOL is being performed to optimize the beam line components to produce the desired ion distribution at the target.

Footnotes

Funding Agency

Paper preparation format

Word

Region represented

North America

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Session Classification: Tuesday Poster Session

Track Classification: MC7: Accelerator Technology and Sustainability: MC7.T31 Subsystems, Technology and Components, Other