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Commissioning of the 71 MeV beam delivery line of the TOP-IMPLART accelerator

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TOP-IMPLART is a pulsed RF proton linear accelerator in operation at the ENEA Frascati Research Center originally built as a technological demonstrator for a full-linear solution to protontherapy, it is currently evolving towards a facility available for research and industrial users in different fields, ranging from biomedical to aerospace applications. It consists of a commercial AccSys PL7 model 425 MHz injector followed by eight SCDTL accelerating modules operating at 3 GHz. Proton beams in the range 1-6 MeV are available from a vertical delivery line placed at the exit of the injector, and at 63 MeV or 71 MeV (intermediate and lower energies are achieved by degraders) from a horizontal delivery line at the exit of the accelerator, where a pulse current variable up to 20 μA is provided in pulses 2.5 μs long at a typical repetition rate of 25 Hz. Our contribution presents the first experimental results from the commissioning of the high-energy line. It is a multi-purpose in-house designed line featuring a magnetic scanning system and a set of instrumentation, diagnostics, and target positioning frames placed on motorized platforms allowing for customizable irradiation setups.

Footnotes

Funding Agency

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I have read and accept the Conference Policies

Yes

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