

8th Beam Telescopes and Test Beams Workshop



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Non-clinical test beams at MedAustron

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MedAustron is a synchrotron based particle therapy centre located in Wiener Neustadt, close to the capital of Austria. At MedAustron, proton beams with energies up to 252.7 MeV are used for cancer treatment. The facility also features an unique beam line exclusively for non-clinical research. This research beam line is also commissioned for even higher proton energies of up to 800 MeV. Additionally, all beam lines at MedAustron will be able to provide carbon ions of up to 400 MeV/u by the end of 2019.

This contribution introduces the possibilities for performing non-clinical beam tests at MedAustron in general. Also our development efforts towards an ion beam computed tomography system will be presented.

Since our detectors are not designed for the nominal clinical particle rates (≈ 4 GHz), different proton rate settings ranging from ≈ 300 Hz to ≈ 4 MHz were commissioned and are now available for test beams at MedAustron. For this purpose an online beam monitor system has been developed, which consist of a rate monitor (using EUDAQ2 and the AIDA2020 TLU) and double sided Silicon strip detectors for beam profile monitoring. The currently available beam settings at MedAustron will be discussed.

After reducing the particle flux, different proton imaging modalities were tested, including track-based multiple scattering tomography and proton computed tomography. First imaging results will be shown.

Primary author: ULRICH-PUR, Felix (Institute for High Energy Physics (HEPHY), Vienna)

Presenter: ULRICH-PUR, Felix (Institute for High Energy Physics (HEPHY), Vienna)

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