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A POSITRON BEAMLINE FOR CHANNELING EXPERIMENTS AT MAMI

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A new high-quality positron 530 MeV beam has been installed at the Institute for Nuclear Physics of the University of Mainz using the features of the MAMI accelerator. Positrons are created by pair conversion of bremsstrahlung, produced by a focused 855 MeV electron beam of MAMI in a 10 μm thick tungsten self converter target, and energy selected by an outside open electron beam-line bending magnet. Magnetic focusing elements in between are designed to prepare in a well shielded chamber a low divergence positron beam. The properties of the positron beam line such as the positron rate, the beam spot size and the divergence of the positron beam will be discussed. First channeling experiments with Silicon crystals will be presented.

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