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## Plans to characterize the NEPOMUC beam with a Retarding Field Analyzer

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The retarding field analyzer (RFA) is capable of measuring the intensity, spatial spread, as well as parallel and perpendicular energy distributions for the different positron beams provided by NEPOMUC.

The last RFA measurements were conducted nearly a decade ago[1], making new measurements essential, particularly in light of the recent modernizations at NEPOMUC. Moreover, the installation of a buffer-gas trap (BGT) system into the NEPOMUC beamline is planned, with the objective of providing high-intensity positron pulses with significantly narrower energy spreads to the experiments. It is therefore also necessary to characterize the output of the BGT, including the confirmation of its lack of adverse effects on the standard NEPOMUC beam, such as non-adiabatic transport.

Here, we present the preliminary plans for the upgrade of the RFA since its last use, as well as single-particle simulations of beam guiding and ray-tracing-based signal estimates.

[1] <https://doi.org/10.1016/j.nima.2016.04.093>

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