

The first year of operation of CologneAMS: performance and developments

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CologneAMS [1], the centre for Accelerator Mass Spectrometry (AMS) at the University of Cologne is operational since October 2011. The main part of the sample measurements were devoted to research work of local geologists which demanded mostly for ^{14}C and ^{10}Be measurements. In addition effort was spent to develop the equipment and the procedures needed for effective measurements of different plutonium isotopes. Extensive ion optics calculations were performed to obtain a better knowledge on the specific optical features of the complete AMS system in order to find the optimal settings for specific isotopes and to provide the basis for future extensions of the system aiming to improve the versatility and the quality of AMS measurements at CologneAMS.

Especially energy and mass dispersions were investigated for the existing system at specific locations. The ion-optics calculations were performed with a homemade transport code with a dedicated user interface, which allows to modify easily parameters via software slide bars and to present the results of the calculations simultaneously on screen.

In this contribution we will report on the measurements performed so far and especially on the quality which has been obtained. We will present results on our first $^{239,240,242}\text{Pu}$ measurements as well as on the general performance of the total AMS system. In addition we will report on our new TOF device [2] with beam profile capabilities and on some other hardware components which were added to the existing system to improve beam diagnostics and beam tuning.

[1] A. Dewald *et al.*, Nucl. Instr. Meth. B, in press, available online 16 May 2012

[2] G. Pascovici *et al.*, Nucl. Instr. Meth. B, in press, available online 22 May 2012