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The first 1000 days of MILEA.03 life

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Since 2021, the first Czech accelerator mass spectrometry laboratory have been operating at the Nuclear Physics Institute of the Czech Academy of Sciences in Řež, near the capital city of Prague. Its primary purpose is to conduct radiocarbon measurements. The Czech Radiocarbon Laboratory (international code CRL) can provide precise results for radiocarbon dating and other applications of ^{14}C analysis. The samples encompass archaeological artifacts, forensic evidence, and environmental samples, contributing to a better understanding of human history and civilization development, aiding in criminal investigations, environmental protection efforts, and biocarbon determination.

The contribution summarizes the age portfolio and types of samples analysed in the laboratory, as well as the processing strategy flowchart for different matrices and contaminations, and implementing robust quality control measures. Additionally, we will discuss the ^{14}C measurement parameters achievable with MILEA, including the unique combination with gas interface system. We will also address challenges and potential solutions encountered during the implementation and operation of our new AMS system. By sharing our experiences and best practices, we aim to facilitate the smooth integration and optimal operation of AMS facilities worldwide, thus advancing the capabilities and accessibility of radiocarbon dating.

Student Submission

No

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