

Trondheim radiocarbon laboratory – performance results and future plans

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Radiocarbon dating is probably the most important dating technique in Quaternary geology, and the accuracy and precision of the ages are critical for our possibilities to make high-resolution records of the Late Quaternary history. To ensure that the results are reproducible between different radiocarbon laboratories, several international inter-comparison studies have been made. However, these inter-comparisons are only relevant as long as no major changes are made to the equipment or protocols used. The National Laboratory for Age Determination at NTNU, Trondheim, has recently re-opened after a major renovation including the installation of a new 1 MV AMS system and a new graphitization line. Thus it is timely to present the new systems and procedures, and show that they are capable of producing reproducible and accurate results e.g. when tested on reference material of known age. Furthermore, we will show our background levels, which are limiting the range of our dates. We will also discuss our future plans for the laboratory, such as the possibility to start measuring ¹⁰Be for cosmogenic surface exposure dating.