Contribution ID: **64** Contribution code: **PSA-7** Type: **Poster**

TESTING AND ASSESSMENT OF HIGH-PRECISION AND HIGH-ACCURACY AMS-RADIOCARBON MEASUREMENTS AT NANJING UNIVERSITY, CHINA

Monday, 21 October 2024 16:55 (20 minutes)

In 2018, an Ionplus 200 kV MIni-CArbon DAting System (MICADAS) Accelerator Mass Spectrometer (AMS) was installed at the Laboratory of AMS Dating and the Environment, Nanjing University (NJU-AMS Laboratory), China. The NJU-AMS Laboratory is largely devoted to research on radiocarbon dating and 14C analysis in fields of earth, environmental and archaeological sciences. The laboratory has successfully employed various pretreatment methods, including routine pretreatment of tree rings, buried wood and subfossil wood, seeds, charcoal, pollen concentrates, organic matter, and shells. In this study, operational status of the NJU-AMS is presented, and results of radiocarbon measurements made on different sample types are reported. Measurements on international standards, references of known age, and blank samples demonstrate that the NJU-AMS runs stably and has good reproducibility on measurement of single samples. The facility is capable of measuring 14C in samples with the precision and accuracy that meet the requirements for investigating annual 14C changes, history-prehistory age dating, and Late Quaternary stratigraphic chronology research.

Student Submission

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Session Classification: Poster Session A

Track Classification: Applications in Climate Studies