^{10}Be INVESTIGATIONS OF SEDIMENTS, SOILS AND LOESS AT GNS

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The past three years have seen rapid advancement in ^{10}Be analytical methods at GNS, and the initiation of three research projects involving "garden variety" ^{10}Be in surficial deposits. A study of nearshore marine sediments from the Wanganui Basin (Castlecliff Section) has identified a 6–8 fold increase in ^{10}Be immediately above the location of the Brunhes-Matuyama paleomagnetic reversal, *ca.* 780 ka. A second ^{10}Be "anomaly" of similar magnitude further up the sequence, *ca.* 700 ka, shows the increase in ^{10}Be cannot be attributed solely to the paleomagnetic reversal, but in large part reflects a major global climatic change at those times resulting in an influx of ^{10}Be during post-glacial ice melting.

The ^{10}Be inventory of a soil formed on till on the inland edge of the Transantarctic Mountains (Antarctica) yields an apparent age of 80 ka (using average global ^{10}Be flux). This age is very much less than the age of the surface estimated by geological and pedological reasoning, the difference being due to much lower rates of infall of ^{10}Be onto the land surface than the global average value. An alternative interpretation of the data assuming constant ^{10}Be flux and known decay rates suggests an age of 12–20 Ma, consistent with the geological evidence.

A 0–500 ka loess sequence at Rangitautau East (Wanganui) has been analyzed for ^{10}Be content (both 4–53-m and <4-m sized separates). Interim results contrast with those of the Chinese Loess Plateau and hint at differences in ^{10}Be flux rates between the Northern and Southern Hemispheres. The results are difficult to interpret in the absence of additional geochemical data, but show a broadly decreasing trend in ^{10}Be (and ^{10}Be/^{9}Be) with increasing depth. The overall level of ^{10}Be in these loesses is about twice that of loess from the Chinese Loess Plateau, reflecting a lower sedimentation rate and/or a higher ^{10}Be source.

THE LEIBNIZ-LABOR AMS FACILITY AT THE CHRISTIAN-ALBRECHTS-UNIVERSITÄT, KIEL, GERMANY

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The Leibniz-Labor für Altersbestimmung und Isotopenforschung of the Christian-Albrechts University accepted its new AMS facility from High Voltage Engineering Europa in September 1995. The system is based on a 3MV Tandetron with a single Cs ion source and a beam separator-recombinator for simultaneous injection of the three isotopic carbon beams similar to the NOSAMS Facility at Woods Hole Oceanographic Institution, USA, and the AMS system at the Centrum voor Isotopen Onderzoek at the University of Groningen, the Netherlands. The AMS system, its technical installations, and workshops are housed in a separate hall, adjacent to a building housing AMS sample- and target preparation laboratories and offices as well as the Kieler radiocarbon dating and mass spectrometry laboratories that are now part of the Leibniz Labor. We will present some of the specifications of the AMS system and its technical installations and discuss the new design features of the Leibniz AMS-machine, *e.g.*, the successful reduction of X-rays by permanent magnets. Examples of the system performance will be given. This includes results of the acceptance tests showing