**Appendix B.**

**Paleomagnetic methods**

All core samples were first cut into 2.1 cm high cylinders so that 3 to 5 cylinders were obtained from each core. From all cylinders the magnetic susceptibility and induced resistivity was measured with the GTK made susceptibility bridge. Densities were measured with a scale by using Archimedes principle where the weight of the sample is measured in air and water and the density then calculated by using the known density of water. Remanent magnetization was measured with the He-free superconducting Squid magnetometer (2G Enterprises) for the majority of samples, so that at least two cylinders from each core was measured. Most of those samples were demagnetized with either step wise increasing alternating field (AF) with a demagnetizer connected to the Squid magnetometer or thermally by subjecting the samples to step wise increasing temperatures with the Geological Survey of Finland made thermal oven surrounded by mju-metal shielding. The remanent magnetization after each demagnetization step was measured, in AF demagnetization automatically throughout the procedure, and in thermal demagnetization manually.

Arithmetic mean values of susceptibility, intensity of remanent magnetization, density and resistivity were calculated for each core sample. Mean values of the remanence directions for cores were calculated by using Fisher (1953) equations. Corresponding mean values were then calculated for each study location. Koenigsberger Q values which shows the relation of remanent and induced magnetization were calculated by using the magnetic field value of 41 A/m. Multicomponent analyses to separate remanence components of the demagnetized samples were done by using principal component analyses (Kirschvink, 1980) with the Mavis software (designed by University of Helsinki and modified in GTK) and visual inspection of data was done by using Zijderveld (Zijderveld, 1967) diagrams.

In order to study the magnetic minerals, thermomagnetic analyses were carried out for selected samples from each study location. In thermomagnetic analyses the powdered sample was heated up to temperature of 700°C and cooled down to room temperature while the susceptibility was monitored at each temperature step. The magnetic mineral was identified by its Curie temperature which is specific for each mineral.

**References**

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