

MEASURING AND MODELLING THE DYNAMIC RESPONSE
OF REMOTE MOUNTAIN LAKE ECOSYSTEMS TO
ENVIRONMENTAL CHANGE

A programme of **MO**untain **LA**ke **R**esearch

MOLAR

**SEDIMENT TRAPS FOR MEASURING
DEPOSITION OF ^{210}Pb AND SCP**

R. Psenner

University of Innsbruck

Sediment traps for measuring annual deposition of ^{210}Pb and SCPs

1. Sampling methods

The rationale is to collect both SCPs and ^{210}Pb which settle to the lake bottom. The amount of material in the traps will be compared with data resulting from soil inventories and total material in the sediment record. We expect to measure a gross flux composed of atmospheric and catchment input and resuspended material from the lake bottom. To distinguish to a certain degree between these two components we will use a trap 2 m beneath lake surface and one 2 m above the bottom of the lake. Two time periods will be analyzed: the winter season (ice-covered period), and the summer season (open water situation).

All possible disturbances which could interact with the sedimentation of particles must be avoided, especially coring must be done very carefully.

In addition to these simple traps which have a small effective catch area, a large marine trap will be exposed in Estany Redò, with higher sampling frequency during the summer months.

2. Trap design

The design of the simple traps is the same as used for the chrysophyte sampling: it consists of an array of 4 tubes (plexiglass or PVC, best made of opaque material), similar to those used for sediment coring. The length to diameter ratio should be around 10, the diameter approximately 60 mm. The tubes are closed at the lower end with a tight cap and 4 of them are fixed on a small platform with a central stick which gives the array the necessary rigidity. Details of the design are available at Mondsee (Roland Schmidt; he will also be able to prepare those traps at a modest price).

The mooring system (see the corresponding section for traps in WP3, by Nigel Cameron) must allow a safe retrieval of the traps, and should not disturb the sediment surface. Also fishing and other sampling activities etc. must be considered before fixing the mooring system.