Geophysical Research Abstracts, Vol. 9, 06571, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-06571

Sedimentological and chronological investigations of debris flow events and the associated sediment dynamic of the alpine lake Pragser Wildsee (Lago di Braies).

A. Thielemann, G. Daut & R. Mäusbacher

Department of Geography, University of Jena, Löbdergraben 32, D-07737 Jena

c9than@uni-jena.de / Fax: +49 (0) 3641 948812 / Phone: +49 (0) 3641 948827

The lake Pragser Wildsee is a high elevated lake in the Dolomites (N-Italy). In former studies (Irmler 2003, Irmler et al. 2005, 2006) the lake sediments of the Pragser Wildsee were used to reconstruct the debris flow frequency of the last millennia by varve counting to generate a detailed debris flow calendar for the last 8000 years. From different problems detected during these first studies it was obvious that it is necessary to have a detailed understanding of nowadays processes which affect/control the formation of annually laminated sediments and the event layers (debris flow, high flood, avalanches) in between.

So the current study primary focuses on the recent to sub recent sediments in order to understand the impact of sedimentation and erosion processes within the catchment area of the lake but also within the lake itself throughout the year. For these purposes two sediment trap systems including temperature sensors were installed in the Pragser Wildsee. During the ice-free period (May-October) samples will be collected every month to differentiate the processes and to quantify the sediment load. The temperature sensors yield detailed information about processes in the lake, such as thermal stratification which strongly influences the type of sedimentation. From samples of the sediment trap first thin sections have been prepared in order to analyse structure and composition of the sediments. The results are compared with thin sections of gravity and piston cores with the aim to understand the various processes that play a role for the formation of varve and event layers. Furthermore these information will be used together with the analysis of thin sections of two piston cores to generate a composite profile which will remarkable enhance the existing debris flow calendar.

References:

Irmler, R. (2003): Seesedimente als natürliches Archiv zur Erstellung eines Murkalenders am Beispiel des Pragser Wildsees (Norditalien), Dissertation. Uni Jena.

Irmler, R., K.v.d. Borg, G. Daut, R. Mäusbacher, H. Schneider & H. Strunk (2005): The reconstruction of debris flow frequency using sediments of lake Lago di Braies/N-Italy. Z. Geomorph. N.F., Suppl.-Vol.138, 37-50.

Irmler, R., G. Daut & R. Mäusbacher (2006): A debris flow calendar from sediments of lake Lago di Braies (N. Italy). Geomorphology 77, 69-78.