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Investigations of the sediment dynamic and debris flow activity of Lake Braies (N-Italy) by using sediment traps and sediment cores

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This study primarily focuses on the recent to sub recent sediments of Lake Braies in order to understand the impact of erosion and sedimentation processes within the catchment area of the lake but also within the lake itself throughout the year (Thielemann et al. 2007). For these purposes two sediment trap systems (each with three sediment traps) including temperature and depth sensors were installed since September 2006. During the ice-free period from May to October samples are collected every month to differentiate the processes and to quantify the sediment load (total sediment flux in $g/m^{-2}/d^{-1}$). Comparing the two sediment trap systems there is a significant variability of the horizontal and vertical total sediment flux ($g/m^{-2}/d^{-1}$) during the period from September 2006 to October 2007. Available datasets of temperature and lake level changes will be used to discuss the influence of thermal stratification on sediment distribution in the lake. From two samples of the long term sediment trap experiment from October 2004 to July 2006 thin sections have been prepared in order to analyse structure and composition of the sediments. These results are compared with thin sections of the same time span in sediment cores to correlate the trap data set with core data. To get a better understanding of the erosional forces of the gravity flows and to complete the existing debris flow (frequency) calendar by Irmler (2003) and Irmler et al. (2005, 2006) another piston core was taken at a location with a nearly undisturbed sediment sequence. First results of the thin section analysis will be discussed.

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