



New exposure ages from Erratic-boulders in the lower Reuss-valley (Switzerland)

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For the understanding of the climate system dynamics, it is important to have a closer look at global climate change signals and their terrestrial documents. Therefore timing of advance and retreat of glaciers in the past is important. During the last glacial maximum (LGM), huge piedmont lobes covered large areas of the northern Alpine foreland. This is evidenced by distribution of erratic boulders. In order to get the timing of the LGM, erratic boulders, which mark the terminus of piedmont glaciers at that time, can be exposure dated with cosmogenic nuclides. Particularly in the Alpine foreland, it is difficult to find good boulders because of the anthropogenic impact. Humans used the erratic boulders or parts of them as building stones, destroyed or displaced them for agricultural purposes. So there are only few potential sampling sites available for surface exposure dating.

In the lower Reuss-valley we sampled three boulders for surface exposure dating with cosmogenic ^{10}Be . Anthropogenic effects on the boulders seems to be unlikely in field but cannot be excluded before the results are available. Two boulders are located on moraines belonging to the LGM maximum extent of Mellingen, which can be chronologically correlated with the "Killwangenstadium" from the Linth/Rhein piedmont lobe. The third boulder is situated between two retreating stadial positions, the local "Rückzugsstadien von Stetten I & II" which are correlated with the "Schlierenstadien". In the chronological aspect, the third boulder belongs to the phase of deglaciation of the lower foreland. The time between the maximum extent and the recession of the Schlieren stadials is dated between around 32000 cal. BP and 23000 cal. BP with radiocarbon. Our results will contribute to the understanding of the timing of processes during and especially at the end of the LGM. Furthermore they will give a control of the radiocarbon chronology.