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The deglaciation in Picos de Europa (area of Enol Glacier) based on geomorphological and sedimentological studies

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The chronology for the deglaciation in the Cantabrian Range is still poorly understood. Several papers have proposed a maximum advance well before the LGM (Jiménez and Farias, 2002; Moreno et al. 2010; Serrano et al. 2012). The Western massif of Picos de Europa held a ice field of 50 km2. In this communication we present two cores collected in two glacial depressions in the frontal area of Enol Glacier that allow reconstructing the environment since the deglaciation of the massif.

The first core (5.6 m long) was collected in the kame terrace of Belbin. This terrace was dammed by a lateral moraine corresponding to the phase of maximum expansion of Enol Glacier. Three clear layers are observed: the basal 2.5 m consists of grey clay with small gravel limestones; the second is 2 m thick and is composed of grey clays; the upper 1.1 m shows several paleosoils with abundant organic matter and charcoals. The based was dated at 14,810 $\pm$ 70 yr BP. This age represents a minimum age for the maximum expansion of Enol Glacier.

The second core was collected in the glaciokarst depression of Vega del Bricial, located within a moraine complex corresponding to LGM. The core is 8 m long and looks very homogeneous. It consists of a succession of organic layers and slope deposits. Two radiocarbon dates were performed on the sediments at 8 and 2.8 m depth, resulting in 9,690 $\pm$ 260 and 3,420 $\pm$ 95 yr BP, respectively.

Based on sedimentological and geomorphological evidences, we propose a chronology for the environmental changes occurred in this massif since the last glacial period.

References

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