The effects of climate warming inferred from an Adamello Glacier (Italy) ice core

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Glacier ice cores from mid latitude are capable of retaining essential information on past climate and anthropic activities at high time resolution. However, Alpine glaciers are also highly sensitive to the current atmospheric warming, which is seriously compromising the quality of the signal preserved in the ice and threatens the very persistence of these ice bodies.

In this context, we present new chronological and palynological results from a 46 m deep ice core extracted from the Adamello glacier in the locality Pian di Neve (3100 m a.s.l.). The glacier is situated in northern Italy and it is the most extened (16,3 km²) and deepest (257 m) glacier of the Southern European Alps. Ice core chronological results obtained from Cs-137, Pb- 210 isotopic analyses, black carbon and pollen annual layer counting will be discussed in the frame of the effects of the ongoing climate warming on Alpine glaciers. Furthermore, we will discuss the palynological data gained from the ice in terms of vegetation changes driven by the combined effect of intensive human activities and alarming climate change in the post World War II period.