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

Daniela Festi¹, Theo Jenk², Margit Schwikowski², Valter Maggi³, and Klaus Oegg⁴

¹Faculty of Science and Technologies, Free University of Bolzano-Bozen, Bolzano, Italy (daniela.festi@unibz.it)

²Paul Scherrer Institute, Willigen, Switzerland

³Earth and Environmental Sciences, University of Milano Bicocca, Milano, Italy

⁴Department of Botany, University of Innsbruck, Austria

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 extended (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.