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**High-Resolution Stratigraphy in a Continental Record: An Integrated Bio- and Magnetostratigraphic Approach from the Northern Alpine Foreland Basin of Switzerland**

To understand the stratigraphic evolution of a sedimentary basin-fill, dating of a sedimentary record is of crucial importance. This can become extremely difficult in continental deposits due to the common lack of fossils that can be used for biostratigraphy. Good age control is also essential for quantification of depositional processes or for correlation purposes within a sedimentary basin. In the last years, numerous case studies proved that magnetostratigraphy is a valuable and reliable tool to achieve excellent age control in continental settings.

The case study presented here is from the northern Alpine foreland basin, a classic example of an asymmetric compressional basin that formed during about 20 m.y. (Oligocene - Miocene) along the northern margin of the Alpine orogen. Near the mountain front, the stratigraphy reveals a more than 4-km-thick succession of continental deposits formed by alluvial, fluvial and lacustrine environments. There, long and continuous profiles allowed to establish a nearly continuous magnetostratigraphic record between ca. 32 and 13 Ma. For an unambiguous magnetostratigraphic correlation, however, additional micro-mammal biostratigraphy and a few radiometrically dated ash layers were essential.

The integrated data set resulted in a bio-/ magnetostratigraphic calibration chart with a temporal resolution of ca. 0.5 m.y. (and less during certain time periods) for the northern Alpine foreland basin. This high-resolution time frame allowed reconstructing interacting orogenic, eustatic and sedimentary processes in great detail.