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Glacial/interglacial and MIS3 climate variability recorded in Lake Van, eastern Anatolia

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The 220 m long sediment profile of Lake Van (eastern Anatolia, Turkey), covering its entire ca. 500 ka long history displays an extraordinary textural variety; laminated-, banded-, and graded-clay sections are intercalated with numerous tephra layers. Here, we present X-ray fluorescence (XRF) profiles, which help not only to delineate compositional differences between the lithotypes, but also to identify intervals of abrupt changes, most likely related to glacial/interglacial transitions. Terrigenous elements (K, Al, Ti, Fe) are more abundant in banded/graded clays than in finely laminated sections. This systematic variation suggests higher detrital supply during colder periods (glacials) and lower during warmer periods (interglacials). Within the topmost 40 m of the profile the terrigenous elements pattern tend to show Dansgaard/Oeschger-type variability and a clear Younger Dryas signal. Comparing our XRF profiles with other available data (e.g.: Lake Van macro- and micro-facial analysis, porewater salinity profile, dating of the terraces) and paleoclimate records from the Levant region we aim to identify the mechanisms transmitting high-latitude climate signal into the mid-latitude continental interior.