



40Ar/39Ar dated climatic and hydrological variability between MIS20 and MIS18 at Sulmona Basin (central Italy)

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Understanding spatial-temporal variability, magnitude and different expressions of Quaternary millennial-scale palaeoclimatic changes is one of the frontier challenges of modern palaeoclimatology. Addressing this issue requires the acquisition of regionally representative, and ideally independently-dated, records of climatic variability. Multiproxy record (stable isotopes, XRF, MS, %CaCO₃) from lacustrine succession of Sulmona basin (central Italy), highlights climatic and hydrological variability at orbital to millennial scales between MIS20 and MIS18. The record highlights the presence of interesting millennial scale variability within MIS19, considered to be the best orbital analogue of the current interglacial. The presence of several tephra layers precisely dated by 40Ar/39Ar technique, allow placement of the record within a robust time frame. Assembling a high-resolution paleoclimatic record for MIS19 anchored to a high-precision 40Ar/39Ar chronology, it is possible to show that the MIS 19c interglacial started shortly before the boreal summer insolation and obliquity maximum/precession minimum at 790-788 ka, and ended 11.6 ± 2.3 kyr later, when orbital parameters assumed a configuration similar to the present one.