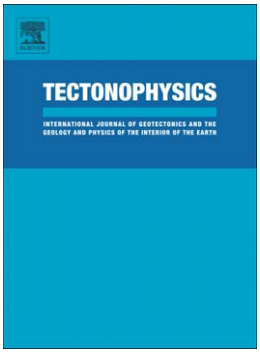

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Middle to Late Pleistocene activity of the northern Matese fault system (southern Apennines, Italy)

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Abstract. An integrated investigation including geological, geomorphological, geophysical and structural survey, tephra analyses, ^{14}C and $^{40}Ar/^{39}Ar$ dating, as well as paleoseismic trenching along the N-Matese fault system is presented. The study allowed the characterization of the tectonic mobility of this structure as well as the associated Bojano basin sedimentary-tectonic evolution since the early Middle Pleistocene, providing also new clues concerning the fault historical activity and the associated Mw>6.5 earthquakes. We have found lines of evidence for >1 mm/yr slip rate along the presently buried Bojano fault during the mid Middle Pleistocene, and similar rates for the main fault segments paralleling the Matese flanks. The buried Bojano fault significantly slowed down during the last 300 kyr, ceasing its activity before the Holocene. In turn, the segments outcropping along the Matese flanks reactivated at the onset of Late Pleistocene, after a long period of quiescence (480-110 ka), with robust slip rates that would seem even accelerating in post LGM