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New insights from palaeoseismological trench across the Grytoni Fault (Central Greece). Comparison with other Aegean active faults.

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We present the preliminary results of a paleoseismological investigation carried out along the Gyrtoni Fault, Tyrnavos Basin (Central Greece), whose occurrence and recent tectonic activity was previously based only on mapping, remote sensing analyses and electrical resistivity tomographies. The south facing, 12-13 km-long, Gyrtoni Fault controls the north border of the Middle-Late Quaternary Tyrnavos Basin at ca. 10 km away from the Larissa city. However, the seismic history of the fault is completely unknown and thus our data offer new results for improving our knowledge on the Holocene tectono-stratigraphy of this structure and for better evaluating the seismic hazard potential of Larissa. The fault controls an approximately 10 m-high degraded composite fault scarp. As the fault scarp is developed in poorly cemented lacustrine deposits it is largely, but irregularly eroded, and the precise location of its trace is not evident in the field. Based on previous electrical resistivity tomographies, the trench investigation confirms the occurrence of an emergent fault plane close to the lower part of the scarp. The palaeoseismological excavation also allowed documenting a transport-limited geomorphological evolution. Numerous samples for Optically stimulated luminescence (OSL) and radiocarbon (14C) dating have been collected and will permit to constrain the timing of the linear morphogenic earthquakes observed in the trench and thus reconstruct the recent seismotectonic behaviour. From a geomorophological and palaeoseismological point of view, the fault is classified as of moderate activity rate with abundant, but discontinuous, geomorphic evidence of its activity. The results of the trench investigation are then compared with those from other active faults excavated in northern Greece.