Geophysical Research Abstracts, Vol. 9, 00283, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-00283

The European Palaeoseismological Museum of Tyrnavos, Central Greece.

R. Caputo (1), B. Helly (2)

(1) Dept. Earth Sciences, University of Ferrara, Italy (rcaputo@unife.it), (2) Maison de l'Orient Mediterranean, Universitè Lyon-2, France.

The Tyrnavos Fault, central Greece, represents one of the major ESE-WNW trending, dip-slip normal faults bordering the Late Pleistocene-Holocene Tyrnavos Basin (Northern Thessaly), where a seismic gap has been suggested to occur. Based on geological (structural, morphological and stratigraphic) and geophysical (electrical resistivity tomographies and ground penetrating radar) investigations, the geometry and the kinematics of the fault have been reconstructed in detail, while its Late Quaternary morphogenic activity has been well recognised so far. Some of the major seismotectonic parameters, like fault length (12+ km) and the maximum expected earthquake (M=6.5-6.7), have been also quantitatively constrained. In particular, the excavation of several palaeoseismological trenches allowed to document the occurrence of Late Pleistocene-Holocene co-seismic surface ruptures (linear 'seismogenetic' features) commonly associated with morphogenic earthquakes characterised by maximum vertical displacements of 20-40 cm and a mean recurrence interval of about 2-2.5 ka. In the central sector of the fault, where past co-seismic displacements are expected to be the largest ones, new palaeoseismological investigations have been carried out with the specific aim of building a Palaeoseismological Museum. The two trenches are up to 7 m in depth, show the occurrence of more than 12 co-seismic surface ruptures and record a continuous morphogenic activity since the last 25 ka. Beyond the scientific results, which remarkable for the very long and complete seismic history of the fault and that confirm the recent seismic behaviour and the relatively high seismic hazard potential, this research and educational initiative represents the first example in Europe of this kind. The fenced in museum park covers a total area of more that 150,000 m^2, including the buildings for the safeguard and protection of the trenches, a seismographic and GPS station, 'scientific-touristic' pathways with explanatory panels,

panoramic views of the fault scarp, car parks and other infrastructures. Proposals and requests of collaboration, for example to install new instruments, are welcome.