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Active Tectonics in the northern rim of Corinth Gulf Rift (Central Greece): the Delphi-Arahova-Amfissa Fault System

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The area of southern Parnassos Mt and Amfissa-Itea plain (northern part of Corinth Gulf Rift) is tectonically controlled by an E-W trending active normal/oblique Late Quaternary fault system. Detailed field observations and mapping, with the aid of remote sensing and morphotectonics, reveal a complicated system of normal/oblique overlapping fault segments, including the main Delphi-Arahova Fault, which migrates westward to Amfissa-Southern Giona area rupturing a 500 m uplifted plateau southwest of Amfissa consisting of Pleistocene terrestrial compact breccia. For the most part, faults have an E-W and WNW-ESE direction with a change to NW-SE in the western part, although some N-S and NE-SW striking faults cut Quaternary deposits in the vicinity of Amfissa. Detailed field measurements show an oblique normal component, with a mean value of 60º W. In the Pleistocene breccia of Ag. Euthymia, SW of Amfissa, recent E-W faults show a significant strike-slip component. The valley of Delphi-Arahova fault is affected by numerous parallel fault scarps, with a height of few meters to more than 300 m. Fault geomorphology becomes more complex in the western part near Amfissa, involving an uplifted Quaternary plateau forming a 300 m cliff over Amfissa plain. Re-examination of historical accounts and field observations in the broader area and in the vicinity of Delphi Oracle archaeological site, suggests possible activation of the Delphi-Arahova-Amfissa Fault System during the historical earthquakes of 551 AD and 1870 AD, and possibly in 279 BC and 1509 AD.