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Recent tectonic movements at the southern border of Kyparissiakos Gulf (Peloponnese, Greece)

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Kyparissiakos Gulf is developed in the NNW-SSE direction along 45 km in central-western Peloponnese, parallel to the Hellenic Trench, which occurs at a distance of only 30 – 40 km to the west. Its northern border occurs in Katakolon, where no-Alpine basement crops out, whereas its southern border passes through Kyparissia and coincides with the major neotectonic fault zone of Kyparissia – Aetos. This zone has uplifted the Alpine basement up to 1225 m., the overall neotectonic offset across this E-W fault zone is about 2.5 km as indicated by: i) the offset of the Alpine structures and especially the deformation of the basal overthrust of the Pindos nappe over the Gavrovo – Tripolis unit and ii) the thickness of the post –Alpine sediments on both sides of the fault zone.

It is interesting that the Holocene deformation follows the neotectonic trend, as this is shown by: i) observations on marine coastal formations occurring along the coastal zone, which indicate a northward tilt of a few decades of meters, and ii) observations in the shallow water offshore zone up to a few hundred meters depth on bathymetric and litho-seismic data obtained using air-gun profiling system over the R/V Aegeon. These data verify the observations of the onshore coastal zone and help to estimate the deformation also in the Late Pleistocene period.