

Quick assessment of the fault plane, for the recent event in Southern Greece (14 February 2008, Mw 6.9)

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Based on previous testing of the so-called H-C method on the M6.2 Leonidio earthquake (see the report on this web page, http://www.emsc-csem.org/index.php?page=current&sub=recent&evt=20080106_GREECE), we issue a quick assessment of the fault plane for the most recent Mw6.9 earthquake in Southern Greece (20080214 at 10:09:23 UTC). Using hypocenter (H) from manual P- and S-wave picks from 14 stations, and centroid (C) from 5 broadband waveforms, determined by the University of Patras,

<http://www.emsc-csem.org/index.php?page=current&sub=rawmt&id=GGMK1>

the hypocenter appears significantly closer (3 km distance from plane) to the low-dip nodal plane than to the high-dip plane (12 km distance from plane). Therefore, the preliminary fault-plane identification is the nodal plane with strike 311°, dip 14°, rake 95°.

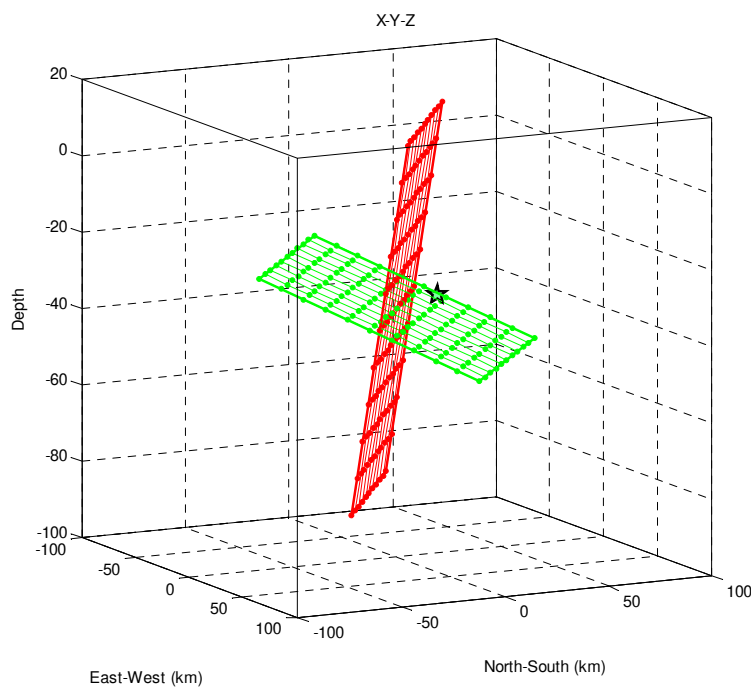


Figure 1. H-C Plot using the UPSL hypocenter and UPSL CMT solution

H is shown by the star, C is in the middle of the two crossing nodal planes. The plane plotted in green, encompassing H, is the likely fault plane. Combining the hypocenter determination of UPSL with the USGS CMT solution provides a supporting evidence for the same conclusion.

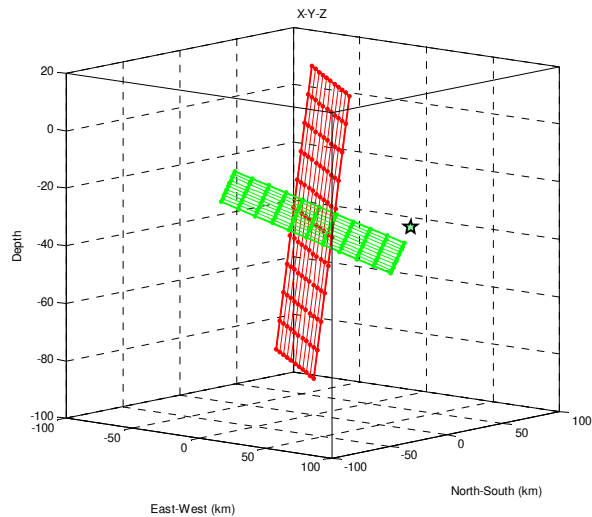


Figure 2. H-C Plot using the UPSL hypocenter and USGS CMT solution

These H-C results agree very well with the regional tectonics, since they indicate a sub-horizontal plane compatible with the subduction process (Aegean - Africa plates) present in the area.

If considering the CMT solutions of UPSL and USGS together with some other automatic hypocenter determinations, available at the moment, and appearing significantly more towards the north, they seem to reject the high-dip plane, but the support of the low-dip plane is less clear.

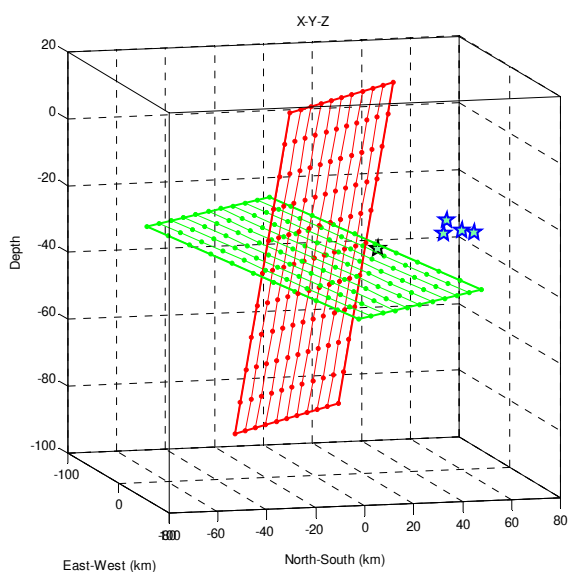


Figure 3. H-C Plot using the UPSL hypocenter (green star), hypocenters of other agencies (USGS, THE, NOA, EMSC, blue stars) and UPSL CMT solution