

The focal mechanism of earthquakes in the Central Mediterranean.

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Summary: The focal mechanisms and the involved stress-patterns of earthquakes in the Central Mediterranean are discussed. It is shown that there exist regions of thrust-, strike-slip and normal faulting.

Résumé: Les mécanismes au foyer des tremblements des terres dans la Méditerranée centrale sont étudiés. Dans les régions différentes il y a des séismes qui ont lieu sur des failles inverses, des failles normales et des failles verticales montrant une dislocation horizontale.

It was shown previously (RIUSCETTI and SCHICK, 1975; SCHICK, 1976) that earthquakes occurring along the Comiso-Messina-S.Eufemia fault in Eastern Sicily and Calabria dominantly show normal faulting mechanism. Apparently this fault extends southward from Sicily into the Malta graben area, as the fault-plane solution of an earthquake of OCT 08, 1949, which occurred between C. Passero and Malta, shows a stress pattern which fits into such an assumption. Earthquakes with strike-slip mechanisms preferably occur along E-W striking fault-planes. The direction of left-lateral and right-lateral faulting alternates in a North-South direction. There is evidence from the stress-patterns of the shocks that the studied area is superimposed by an approximately NE-SW oriented compressional stress-field. It is interesting to notice that the earthquake of Feb 12, 1968, which is situated in the "Mediterranean ridge" at 38°N, 18°E, shows compressional stress approximately normal to the strike-direction of the "ridge". This is in accordance with an interpretation of FINETTI (1976), which was based mainly on seismic reflection data, that the so-called Mediterranean ridge is a geodynamical compression zone. A simplified map of the seismotectonic stress-field is given in Fig. 1.

References:

FINETTI, I. (1976): Mediterranean ridge, a young submerged chain associated with the Hellenic arc. - *Boll.diGeof. ed appl.* Vol.19,p.31-65.

RIUSCETTI, M., SCHICK, R. (1975): Earthquakes and tectonics in Southern Italy. - Boll.di Geof.teor.ed appl., Vol.17, p.59-78.

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