

STRESS DROP OF LARGE EARTHQUAKES IN GREECE

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The stress drop of large earthquakes which occurred in Greece after 1978 is examined in the present paper. For this reason the most reliable published data concerning fault dimensions, average displacement and seismic moment of these earthquakes have been used. The stress drop values that have been obtained by the use of the average displacements of the faults as well as of the seismic moments and the dimensions of the surfaces of the faults indicate that the earthquakes which occurred in the Aegean region are characterized by low stress drop values. These values are lower than the mean values that hold worldwide.

THE STRUCTURE OF THE NISSYROS GEOTHERMAL FIELD DEDUCED FROM A MAGNETOTELLURIC SURVEY

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An Audio-Magnetotelluric (AMT) survey of 20 measurements was carried out in the flat part of the Nissyros Caldera, in the frequency range 128 Hz - 0.016 Hz. The purpose of this geophysical survey was to investigate the deeper conductivity structure of the geothermal field of the area.

Two AMT profiles, trending almost N-S along the inner flat region of the caldera, in addition to a smaller third one perpendicular to the first two, were performed. Even though the adopted 1-D modelling inversion techniques have resulted in an electrical conductivity structure down to 5-6 Km, only the top 2 Km of the resistivity variation with depth, associated with the geothermal field of the island, is presented in this study.

The most interesting features, which resulted from the applied 1-D inversion modelling, are the electrical conductivity layers related to the two reservoirs identified by the two deep boreholes (about 1500 m), N1 and N2. The shallower reservoir seems to be associated with the most conductive layer (0.6 - 2.4 ohm.m), ranging from 200 to 500 m depth from the ground surface. At a depth of 1000 - 1100 m, the upper surface of the deeper, *elotesta*, reservoir seems to be initiated. This particular layer has apparent resistivity values ranging from 12-15 ohm.m. Interesting faulting features are also inferred. One of them should be running at approximately the center flat part of the Nissyros Caldera, trending almost in between the N-S AMT profiles.