fault traces have been used to determine the orientation of active seismic faults in the Aegean and the surrounding area. The distribution of the focal mechanisms of the earthquakes declares the existence of thrust faulting, having a NW-SE strike, following the coastline of southern Yuogoslavie, Albania and western Greece extending up to the island of Cephalonia. Along the convex side of the Hellenic arc thrust faulting also occurs, as a result of the subduction of the African lithosphere under the Aegean. In the area of Cephalonia island strike-slip faulting is observed that connects these two zones of compression. The inner part of the mainland of Greece as well as western Turkey is dominated by normal faulting. Active faulting in these areas have an approximately EW orientation. The area of the Northern Aegean is dominated by strike-slip faulting that has an NE-SW trend, in accordance with the existence of the strands of the North Anatolia fault into the Aegean. However, some of the focal mechanisms exibit stronger or weaker normal component. There is also a zone of active normal faulting, with a NS strike, that lies between the outer zone of thrusting and the inner part of normal faulting. This is considered as a suture zone connecting two major systems of thrust faults from one side and major normal faulting from the other.

RATES OF ACTIVE CRUSTAL DEFORMATION IN THE AEGEAN AND SURROUNDING AREA

C.B. Papazachos, A.A. Kiratzi and B.C. Papazachos

Geophysical Laboratory, University of Thessaloniki, P.O.Box, 352-1, GR 54006, Thessaloniki, Greece.

Active crustal deformation is estimated for 26 shallow seismic zones of the Aegean and the surrounding area. The "size" of the deformation is estimated by the use of all available complete samples of instrumental and historical data (magnitudes, epicentres) for each seismic zone, and the "shape" of the deformation is determined by all reliable fault plane solutions for each of 8 broader seismic belts.

Crustal shortening occurs all along the western and southern coast of the area (Adriatic, Ionian, east Mediterranean). Along the western coast of Yugoslavia, Albania and central Greece the shortening rate is around 2mm/yr in a direction perpendicular to the coast line (N47°E). In the Ionian islands (Leukada, Cephalonia, Zante) shortening of 9 mm/yr in an almost east-west direction (N83°E) together with extension of 11 mm/yr in an almost north-south direction (N6°E) occurs. The upper crust along the convex side of the Hellenic arc (south of Peloponesus, Crete, Rhodos) is compressed at a rate of 5 mm/yr in a direction of N34° E.

In the Aegean Sea and the surrounding lands (mainland of eastern and northern Greece, southern Yugoslavia and Bulgaria, western Turkey) extension dominates, with an active expansion rate of 4 mm/yr in an about north-south direction (N5°E). In the

northwestern Anatolia and northern Aegean fault zones extension of 14 mm/yr in the direction N14°E and compression of 17 mm/yr in the direction N110° E occurs.

A vertical crustal thickening of the order of 0.3 mm/yr is observed in the compressional zone along the western and southern coastal zone, while a vertical crustal thinning of about 0.9 mm/yr is observed in the inner broad extensional Aegean area.

In the western part of the area and between the external compressional field and the internal extension field, a belt with an almost north-south orientation exists (eastern Albania-western mainland of Greece up to the western corner of Crete). This zone is dominated by an extension of 2 mm/yr in the direction N111°E. A vertical thinning of 0.2 mm/yr is also observed in this belt.

A CONTRIBUTION OF CORNELL'S CLASSICAL APPROACH TO SEISMIC HAZARD ANALYSIS OF VOLOS; CENTRAL GREECE

J. Papoulia

Earthquake Plan. & Prot. Org., Mesogion 226, 15561 Athens

The estimation of seismic hazard of an area is of primary importance in earthquake engineering. This analysis deals with the application of Cornell's model for the evaluation of the future seismic loading in the city of Volos, central Greece. The model is based on the combination of the main seismotectonic features of small seismic sources with the recurrence model of each source. Specifically, the assessment of seismic hazard at the site involves four stages.

(i) delineation of the potential seismic sources around the site of interest, (ii) determination of the recurrence model of earthquakes in each source, (iii) choice of the attenuation model and (iv) estimation of the contribution of all sources to the site.

The results of the analysis are in good correlation with the real (observed) values in the city. Specifically, the return period for acceleration 0.2g. is 24 years. A close inspection of the detailed numerical results reveals the level of the contribution of each source to the estimated hazard. Thus, source 1, south to the city of Volos, contributes about 70% of the total hazard.

The sensitivity of the model to a certain number of input parameters is further investigated, using alternative values and repeating the calculations.