

7-8 - CRUSTAL STRUCTURE IN THE EASTERN IONEAN SEA DERIVED FROM SEISMIC
REFRACTIONAL -

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Results from refractional seismic measurements in 1971 with the German research ship "Meteor" - cruise 22 into the Eastern Ionean Sea - have been demonstrated. About 120 shots between 100 and 1000 kg charges had been exploded on a profile line running in nearly West-East direction from the Mediterranean Ridge in the West, crossing the Mediterranean trench and the Peloponnes, upto Agina. The profile length is about 320 km. 25 seismic land-stations or various german institutions and four seastations (Hamburg) have recorded the explosions at sea. A crustal model has been calculated from the results of these four sea stations and the western three landstations near the coast on the western part of the Ionean Sea Peloponnes profile (130 km). The thickness of the sediments under the Mediterranean Ridge reaches about 5-6000 m, nearly the same as East of the Malta Shelf and in the deep Ionean Sea (Weigel, Hinz 1970). In the strong fractured area of the Mediterranean trough, there is an indication for a graben, the cristalline bottom of which has a depth of about 7 000 m. This graben is filled with mainly consolidated sediments (seismic p-velocities of 3,8 and 4,6 km./s.) To the Peloponnes follows a smooth part of the shelf and the sediment thickness grows to East. An intermediate layer (7,2 km./s) has been observed all over the profile in a mean depth of 13 km. A Moho had not been observed by seismics within this part of the profile(130 km.), but has been calculated from the presented model from gravity results (Rabinowitz, Ryan, Morelli, Makris) in about 50 km. under the coast of the Peloponnes. This depth is in good agreement with that of the young mountains systems of the Alps and Dinarides. These results, and those of the Malta-Shelf and the deep Ionean Sea, point to a sunken area of a formely continental crust.