7. Repeation of the steps until the best fit between observed and calculated gravity profiles is achieved.

In conclusion, from the intregraded study of the available geophysical, geological and well data, a final geological model of the Orestias basin has been deduced.

According to this model the maximum depth of the basin is about 4 Km. The sedimentary formations are Plio-Quaternary, Oligocene and Eocene. The crystalline basement consists mainly of leucocratic and mafic gneiss and on top of that exists a serpentinite – amphibolite unit. The estimated max. thickness of the above unit is 1-2 Km.

GEODYNAMICS OF THE AEGEAN AREA

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The basic seismotectonic features of the Aegean and aurrounding areas ere described. Compressional tectonics along the external part of the Hellenic erc (Zante, S. Peloponnesus, S. Grete, S. Rhodos) due to oceanic – continental collision (subduction) is connected with continental – continental collision along the Adriatic coast by a transform strike-slip dextral fault in the central part of the Ionian islands (Cephalonia). Normal faulting is observed in the whole inner part of the Aegean eres, from Crete in the south to Bulgaria in the north and from eastern Albania and central Greece in the west to all western Turkey in the east. However, in the northwestern part of Turkey and in the northernmost part of the Aegean Sea strike-slip dextral faulting is observed. The tensional field (axis T) in the Aegean has an almost North-South trend but close to the boundary with the outer thrust zone in the western part of the area it changes direction and the T axis hes an almost east – west direction. The most important geodynamic models which have been proposed to interprete this stress pattern are described.

It is concluded that the forces acting on the Aegean lithosphere are of two kinds: a) Compressional forces due: to the northwestern relative motion of the eastern Mediterranean lithosphere, Σ_1, to the counterclockwise rotation of the Apoulian (Adriatic) lithosphere, Σ_2, and to the westward motion of the Turkish lithosphere, and b) Tensional forces, E_φ, acting in the Aegean lithophere mainly in the north-south direction.