Changes in the Crust and in the sedimentary cover across the transition from the Arabian platform to the Mediterranean Basin : evidence from seismic refraction and sedimentary studies in Israel and in Sinai.

by

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Abstract

A seismic refraction study of Sinai and the Negev indicates a change in the thickness of the crust from more than 40 km in the northeastern Sinai and central Negev to about 18 km towards the Mediterranean, out of which one half is sediments and one half is a crystalline crust. The sedimentary cover changes in thickness from more than 2 kms in northeastern Sinai and central Negev to about 9 kms near the Mediterranean. This change is interpreted as the transition from a continental to an apparently oceanic crust. Along the present coastline of the Levant and of Sinai there is a hinge-belt in which changes in thickness and environments of deposition of the sediments were observed. There is a transition from a shallow shelf and platform sediments, through shelf-edge reefs and high-energy sediments into continental -slope environments. The thickness changes also indicate a basinwards shift, with time, of the axis of maximum thickness, which is interpreted as a progressive construction of continental shelves on pre-existing continental slopes. These coinciding features along the hinge-belt are interpreted as the fossil continental margin of the Arabian platform bordering the Tethys Ocean.

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