

CONTINENTAL MARGINS — AN OVERVIEW

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Atlantic-type passive continental margins record a history starting with extensional tectonics in the break-up period. Subsidence follows and is probably associated with cooling of the attenuated crust moving away from the spreading center. Extensional faulting with or without diapirism was common. Gulf of Mexico-type margins show a similar history but cannot be directly related to spreading ridges. It is speculated that the initial crustal attenuation was related to the formation of behind-arc marginal basins or their continental equivalents (e.g. Pannonian Basin).

Ancient miogeosynclines are similar to modern passive margins. They and their associated oceans were transformed into active margins. Deep sea trenches on modern active margins can be viewed as moats associated with the subduction and disposal of oceanic lithosphere (B-Subduction). Their counterparts are the foredeeps or moats associated with the subduction and disposal of continental lithosphere (A-Subduction). Deformation on active margins is associated with extensive igneous activity and scraping of sediments or decollement tectonics.

Some remaining problems could be elucidated by subsidence studies and models compatible with reliable heat flow and paleotemperature data. Detailed documented cross sections and reconstructions without exaggeration would allow better structural understanding.