
Tectonics of Afghan-India Collision Zone, Kuram-Waziristan Region, N. Pakistan

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Abstract

The NW India-Afghanistan collision zone exposed in Kurram-Waziristan area of N. Pakistan comprises a stack of thrust sheets derived from various parts of a continental shelf-ocean floor transition, formerly located at the NW margin of the Indian plate. From SW to NE, these thrust sheets include Waziristan Ophiolite (oceanic mantle-crust sequence), Khaisora-Kurram Group (distal/outer shelf-slope sequence), Shahur Tangi-Kahi Group (oceanic fore-deep/olistostrome) and Isha Group (proximal/inner continental shelf). Late Palaeocene and younger shallow-marine limestone and terrestrial foreland molasse sediments unconformably overly this thrust stack, suggesting middle Palaeocene as the minimum age of thrust stacking. Lack of this unconformity in the shelf-sequences in the north (e.g., Kalachitta, Margala) suggest that this tectonic event was local, probably related with an event of ophiolite obduction rather than related with India-Eurasia collision. An earlier event of ophiolite obduction is indicated by the Middle Cretaceous Shahur Tangi-Kahi mélange/olistostrome. The Afghan-India continent-continent collision in this region is indicated by Middle Eocene obliteration of marine sedimentation and continued transpression as late as < 2 Ma ago.
