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New geological map and sections across the Makran Accretionary wedge in SE Iran

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The Makran Accretionary Prism (MAP) is formed by active convergence between the Eurasian and the Arabian plates. The system is characterized by a shallow slab dip (<2°), great sediment thickness in the Oman Sea and a wedge width of >500 km, >300 km of which are exposed onshore.
New mapping results and structural sections document the structural and stratigraphic development of the accretionary wedge.
The inner Makran was a turbidite basin on an active margin between the late Paleocene – early Eocene and the Serravallian. The oldest, well-dated turbidites are Early Eocene with typically rhythmic alternation of brown, usually volcanogenic sandstone, and lighter-coloured shales; this upward-coarsening unit represents relatively distal slope deposits conformably covering a series of pillow basalts, basaltic flows, pelagic limestones and shales of early Palaeogene age. In latest Oligocene - Early Miocene times, the depositional environment became marked by tidal influence in turbidites and the deposition of marls, reef carbonates and calcareous sandstones.
The main tectonic activity took place during the Early to Middle Miocene as documented by unconformities and growth structures. Shortening in the internal Makran is accommodated along large E-W trending thrusts and folds, which are sealed by a giant catastrophic mud-and-debris flow emplaced in the Tortonian (ca. 10 Ma). This olistostrome is the youngest unit in most of the inner Makran.
In the outer, coastal Makran, outcropping sediments are mostly younger than middle Miocene, the olistostrome is one of the oldest units, mainly outcropping in the core of anticlines. The external Makran is much less deformed than the inner parts, large thrusts are absent. The typical structures are open synclines with long wavelength (>20 km) and low amplitude alternating with tighter anticlines.
Plio-Pleistocene conglomerates unconformably cover upper Miocene-Pliocene marls. Normal faults along the coast cut the Plio-Pleistocene units, which are uplifted to a present position of ca. 100m.