



Cenezoic evolution of the early Zagros foreland basin in the Lurestan Province (NE Zagros). Insights from biostratigraphy of the Amiran-Kashkan detritic sequence and new fission tracks dating.

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Sedimentary filling of foreland basins provides good record of orogenic history. The Zagros foreland basin (SE Iran) developed as soon as late Cretaceous time when tectonic slices carrying ophiolites were emplaced on the north Arabian passive margin. In the Lurestan Province (NE Zagros), the detritic Amiran, Taleh Zang and Kashkan formations were accumulated in a limited flexural basin in response to the advancing thrust sheets.

New biostratigraphic data permit to date accurately this shallowing-upward detritic sequence to the Paleocene (late Danian-Thantian). On the base of this new age and on apatite fission tracks dating, a new evolution model can be proposed for the foreland basin. Two massive arrivals of detritic material are identified in the flexural basin: the Campanian-Maastrichtian olistholiths and conglomerates, and the deposition Paleocene Amiran-Kashkan sequence. The internal part of the basin is uplifted and eroded during the late Paleocene. Eroded sediments are reworked in the Amiran Fm. The post-tectonic Kashkan Fm., deposited in continuity to the Amiran Fm. in the cen-

tre of the basin, fossilizes the erosion surface toward internal part. A quiet period of erosion/non-deposition take place during more than 10 My after the deposition of the Kashkan conglomerates and before the regional transgression of the Miocene As-mari limestones. Twelve detritic samples from the Amiran-Kashkan Fm. and from the Agha Jari Fm. with five metamorphic samples from the internal belt present ages populations related to the formation and emplacement of ophiolites (91 Ma, 66 Ma), and the post-Kashkan erosion period (with a very important pick around 40 Ma and a smaller around 21 Ma). The burial and erosion of the basin may have an important influence on hydrocarbon history.