



Post Cretaceous kinematics of the Atlas and Tell Systems in central Algeria

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Available surface and industrial subsurface data provide the basis for a general balanced cross-section from the Sahara platform to the Mediterranean Sea in Central Algeria. This section gives an overview of the whole Maghrebien orogen comprising from south to north the following structural domains: the intra-continental Atlas system; the External Tell system, deriving from the African palaeo-margin; the Flyschs domain, representing the cover of the former oceanic domain and, finally, the Kabyliides domain of European affinities. Restoration of the southern segment of the section, comprising the Atlas and External Tell systems, yields a minimum value of 40 km (20%) of horizontal shortening. For this part of the section, a four-step kinematic scenario, built using the THRUST-PACK software, illustrates the main stages of the deformation history: (1) late Eocene "Atlas" deformation pulse, (2) early Miocene deposition of a thick flexural sequence, (3) middle-late Miocene emplacement of the Tell nappes and (4) late Miocene to present out-of-sequence thrusting. On this basis, a conceptual geodynamic model is proposed for the whole Maghrebien orogen. After the Atlas event, which just preceded the roll-back of the Tethyan slab, the model emphasises the role of subduction responsible for: (1) flexuration of the subducting plate (slab pull effect); (2) development of both accretionary prism and back-arc basin and (3) late uplift linked to slab break-off.