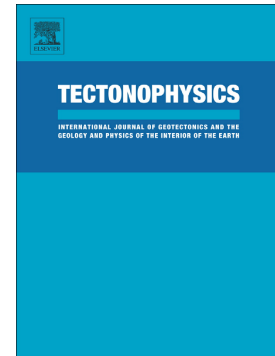


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Results from analog modeling and application to the Columbrets
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Formation and inversion of salt-detached ramp-syncline basins. Results from analog modeling and application to the Columbrets Basin (Western Mediterranean).

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ABSTRACT

The widespread extensional deformation that took place during Jurassic to Cretaceous times in Western Europe and the North Atlantic margin resulted in the formation of several rift systems. Some of the resulting basins associated with these rifts show broad synclines detached on pre- or syn-kinematic Permian or Triassic salts, and are filled by thick sedimentary successions. The development of these salt-detached ramp-syncline basins has been associated to the extensional motion of ramp/flat extensional sub-salt faults. The shape and kinematics of such faults have usually been established using the architecture of syn-kinematic units and by assuming complete coupling of the hanging wall rocks. Therefore, there are fault interpretations that do not consider the role played by the deep salt layers, which clearly act as an effective detachment, decoupling sub- and supra-salt deformations. Moreover, the complexity of these scenarios further increases due to some of these basins, which, during latest Cretaceous and Cenozoic times, were partially inverted and were often incorporated into fold-and-thrust belts.

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