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# Understanding the Mesozoic extensional structure and its influence on the subsequent inversion in the Organyà Basin, (Central Pyrenees).

Master research Project

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## **ABSTRACT:**

Organyà Basin constitutes a clear example of Lower Cretaceous extensional basins incorporated into the thrust Pyrenean system during Upper Cretaceous-Upper Oligocene. The inversion of its south margin is associated to the development of Bóixols thrust sheet, where the basin is located. W-E trending structures dominate the geomorphology of the study area in the thrust sheet. The final geometry of the basin has been well documented that is related to the extension configuration during Lower Cretaceous. An integrated field-based and structural analysis are presented to reconstruct and analyze the dominating structures that control its geometry. The results suggest that there is an evident lateral variation of the basin, between western and eastern part of Segre River. The along-strike variation may be associated to the presence of a transpressive fault but also to salt distribution during extension. Triassic salt plays an important role on the arrangement of the basin. The extensional structure was controlled by salt migration with partial coupling and in consequence salt-related structures have been interpreted. On this study, the growing of a diapir is proposed for the evolution of the eastern section during extension, whereas the western part interpretation is mostly linked to extensional faults influence. However, in both sections, salt movement establishes the main control factor of their development during both extension and compressin.