

# Structural and sedimentary analysis of the Torre de Buirá minibasin

## Ribagorça basin, South Central Pyrenees, Spain

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### ABSTRACT

Passive and rift margins, inverted and shortened during orogenic compression, are classical scenarios for halokinetic processes, which commonly result in diapirism and development of salt tectonics. In this regard, extensional tectonics related to the diapiric growth during the Jurassic – Cretaceous took place along the rim of the Mesozoic Pyrenean rift. This extensional event finished at the end of the Cretaceous, where Alpine compression initiated using the Triassic evaporitic rocks as a detachment.

The goal of this Msc. Thesis is to investigate the diapiric structures of the Ribagorça basin with special emphasis in the Torre de Buirá area (South Pyrenees). Results of extensive field mapping and structural analysis indicate that the study area shows two sedimentary depocenters: (1) the Torre de Buirá sub-basin, which groups Middle Jurassic to Lower Cretaceous successions outcropping from *Barranc de Sirés* (Pont de Suert) to *Serrat de la Creu* and (2) the Escales sub-basin, which includes a Lower Jurassic to Upper Cretaceous overturned sequence, outcropping southwards from Torre de Buirá, to *Barranc de les Casetes* valley, where it is located a major weld named as Faiada. The Jurassic succession located on both sub-basins shows thinning geometries towards the thrust-weld that separates both depocenters. The Lower Cretaceous units exhibits significant variations within the Buirá sub-basin, which suggests a lateral relationship with Montiberri unit. Lower and Upper Cretaceous rocks distributed in an onlapping geometry in the Escales sub-basin, indicates an accommodation gain.

Results highlight the occurrence of several extensional episodes in the Torre de Buirá (Ribagorça basin) favored by the underlying Triassic evaporites.