

Geometry of the Cenomanian Santa Fe Fm. in the Bóixols anticline (Bóixols transect, South Central Pyrenees)

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Abstract

The Bóixols anticline, located in the south Pyrenean fold and thrust belt (north Spain) offers on its north flank excellent outcrops of a Mid-Late Cretaceous sedimentary succession showing a fracture network traditionally interpreted as a late extensional fault system. However, the study area shows a complex geometry of the sedimentary succession above the Cenomanian carbonate platform, which is difficult to explain from a structural point of view. This project was achieved by a combination of field and remote sensing methods that include the collection of stratigraphic, sedimentologic and structural data. Field observations and logging of three lithostratigraphic sections allowed to correlate the lithological units across the study area, which have been divided in five units (A to E), corresponding to previously described formations of Lluça marls, Santa Fe limestones, Reguard formation and Congost d'Erinya formation, last one been subdivided into two subunits. The 3D model performed using MOVE software shows both the tectonic repetition of the Cenomanian and Turonian-Coniacian successions and the stratigraphic changes in thickness, showing evidence of the thrust surface and the syn-depositional origin of the structure, respectively. Moreover, the listric fault system seems to have a local control in the area.