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Evaporites can play a major role in controlling the architecture of external orogenic belts, both during extensional and subsequent compressional phases. However, salt can also 'hide' deformation due to its ability to flow and dissolve. The challenge is to recognise the imprint of its past presence and influence. In the NE Pyrenees multiple deformation phases have been identified based on locally anomalous stratigraphic and structural relationships. This has resulted in complex, sometimes incoherent and often conflictual models of orogenic history. For example, a pre-Cenomanian deformation phase has been interpreted as either extensional or compressional. As part of the ANR-PYRAMID project, we re-examine a series of key localities around the eastern Mouthoumet massif, in the Corbières foreland and along the Corbières thrust front to reconstruct a coherent deformation history involving salt tectonics.
Keuper (Carnian - Rhetian) evaporitic deposits gave rise to diapirs and detachments that were particularly active during Early to Late Cretaceous extension and later during Late Cretaceous to Eocene compression. Growth unconformities and rapid thickness changes in the Aptian Quillan basin indicate that it developed as a salt controlled minibasin. Olistoliths, gypsum breccias and presence of bipyramidal quartz in Albian strata preserved as footwall imbricates along the North Pyrenean thrust front (e.g. around Cucugnan) attest to the proximity of a large diapiric body. Below the Cenomanian unconformity, rotated fault blocks of Liassic to Albian strata lie above a Keuper detachment. These extensional fault blocks have already been recognised at the Serre de Bouchard. They are also preserved north of Cucugnan, and in the Montagne de Tauch with little or no alpine inversion.
In the Corbières foreland area salt influenced extensional and compressional deformation generated growth folds, with completely overturned limbs (flaps), welds, growth unconformities and pinched salt-cored anticlines. Several of these structures have generated considerable controversy in the past (Pinède de Durban, Boutenac anticline, Ripaud syncline). In the light on new advances in understanding salt related stratal and fault geometries we propose a new interpretation integrating halokinesis of these foreland structures.

4.2.18 (o) Paleomagnetic database in the Pyrenees : an assessment

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Paleomagnetic studies have been conducted in the Pyrenees (and in its foreland basins) since the earlier sixties and have continued during the next decades, particularly increasing in the nineties. At the moment, the research interest is still growing as regards of the increasing in number of publications. This vast amount of data is due to several reasons including the availability of synorogenic materials (allowing an accurate dating of deformation), excellent outcrops (including stratigraphic sequences with global interest), the existence of well-exposed zones of lateral transference of deformation (undergoing vertical-axis rotations) among other. This enviable frame has produced one of the densest and most homogeneous networks in orogenic zones of the world.
Until now, the compiled data derive from more than 400 references, including ≈200 indexed papers, >40 academic memories and other publications (proceedings, technical reports, etc). In total, we have compiled more than 30000 demagnetizations coming from more than 1800 sampling points, ≈150 of them are magstrat profiles (>85 kilometers of sections). A significant effort of data standardization was done during the last few years to precise the geographic, structural, and stratigraphic information as well as the quality of the raw paleomagnetic data. So far, most part of this information is available in the IGME's data servers (http ://wwwigmees/infoigme/visor/). Additional improvements in both data accessibility and updating are still in progress. This compilation was carried out by the Geokin3DPyr group during the last ten years under the financial support of the Pyrenean Network (European INTERREG program). In this contribution we will show the state of the art of the dataset.

4.2.19 (o) Transpression et inversion des failles normales crétacés lors de la compression pyrénéenne (Plenzia - Armintza, Pays Basque espagnol)

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Sur la côte du Pays Basque espagnol, la zone de Plenzia-Armintza présente de nombreuses failles normales synsédimentaires, actives de l'Albien au Santonien. Ces failles synsédimentaires sont identifées sur le terrain, grâce à des dépôts gravitaires, des onlaps, des éventails et des variations d'épaisseur. Ces failles sont majoritairement de direction NE-SW, avec une famille mineure de direction N-S. Elles sont interprétées comme accommodant une extension de direction NW-SE, probablement oblique à la limite de plaque, pendant le Crétacé.
La majorité de ces failles sont réactivés en compression, lors de la phase pyrénéenne, postérieurement au dépôt des unités santoniennes. La déformation se traduit par des chevauchements vers le NNW, accompagnés de plis à axes horizontaux, d'axes NE-SW, déversés vers le NW et parallèles aux failles normales crétacées. Ces plis se développent uniquement dans les unités ayant une rhéologie relativement plastique. Dans certains couloirs de failles orientés NE-SW, des plis disymétriques à axes subverticaux montrent un cisaillement dextre, ce qui implique des processus de transpression. De plus, de nombreuses fentes de tension sont présentes dans les plis à axes horizontaux et sont orthogonales à ces derniers. Elles confirment l'existence d'une composante décrochante.
Le décrochement dextre est interprété comme étant le résultat d'un effet de bord associé au bloc Landais, un bloc de socle présent au nord de la zone d'étude, et soulevé pendant le Crétacé. Le raccourcissement pyrénéen, probablement orienté NNW-SSE induit l'extrusion latérale vers l'ouest de la zone d'étude, qui vient en « butée » contre ce bloc de socle. Cela induit des processus locaux de transpression dextre le long des failles héritées NE-SW.