Chair for Geostructure

UPPA-TOTAL-CNRS

The structural geology chair aims at formalizing the strong collaboration between the academic research and staff of the University of Pau and Pays de l'Adour and the Total research group, in the framework of geosciences research. Geosciences are clearly at the frontier between academic topics and industrial objectives, trying to unravel Earth dynamics, but still concerned by societal outcomes particularly at the foreground today, such as georessources, sustainability of resources exploration, and energy storage. In this context, several targets have been envisioned, and integrated into the laboratory's quadriennial objectives:

* Dynamics of fold and thrust belts;
* Salt tectonics;
* Fluid rock interaction and record of basin evolution.

These topics are tackled through research collaboration such as postdoctoral and PhD projects, to which are associated more industrial collaboration and expertise actions. A key point here is to take advantage of the support and data from the industrial partner to promote collaborative research on the mid term.

The chair provided an extraordinary opportunity to undertake the study of the forgotten Sivas basin in central Turkey, probably the most impressive field analogue of the deep Angola or Gulf of Mexico margins. Salt is probably the most deformable rock on earth and thus allows for spectacular structures to develop. Its seismic and rheological properties, the resultant geometries, everything contribute to a quite poor seismic imaging. Field analogue are thus of prime importance, and due to this, four PhD projects were launched to jointly tackle the sedimentological evolution, the structural geometries and related facies changes, the evaporite facies, depositional environments and associated mineralogical damage, and eventually the geodynamic evolution of the basin itself, at the crossroads of closing oceanic
basins and growing collisional belts. Associated with this project, the chair has offered possibilities for promising topics such as the unusual association of seismic interpretation, field geology and geomorphology, or the analysis of reservoir damage at contrasted scales, from the prospect to the thin section.

After five years of successful projects, resulting in five defended PhD dissertations (and C. Ribes, the 2016 best thesis of the French Geological Society), three postdoctoral projects, and two expertise actions, and valued by more than 20 peer reviewed papers, 60 conference presentations and several field trips and courses, the chair is now renewed for five years on similar basis. This experience has proven that a tight association between a research team and an industrial partner motivated to promote scientific exchanges is a definitely a successful framework for research.