

# GET GEOSCIENCES AND ENVIRONMENT TOULOUSE

UMR 5563 CNRS /  
UR 234 IRD / UM  
97 UPS / CNES  
TEAM ET1, TEAM ET3,  
TEAM ET4, TEAM ET6,  
TEAM ET7

Fields of application  
Oil & gas exploration  
Frontier basin exploration  
Characterization of oil & gas systems  
Metal and oil deposits in orogenic contexts  
Geophysical exploration and interpretation (gravimetry, seismology)  
Mineral sequestration of CO<sub>2</sub>  
Enhanced oil recovery  
Gas-water-rock interactions

## Research themes and know-how

### ET1: Georesources

The research projects of our multi-disciplinary team are focused on the fundamental stages of the genesis of oil and metal deposits. Our main work sites are situated in Africa and South America where we are working in partnership in order to improve the evaluation and management of georesources.

### ET3: Geophysics and space geodesy

The team is conducting fundamental and applied research on global geodesy (shape and movements of the Earth), the deep structure of sedimentary basins and mountain ranges, the deformation of the Earth's crust and on the evolution and balance of water storage in the hydrosphere or cryosphere. Its fields of competency include gravimetry, seismology, space geodesy (GNSS) and numerical modeling.

### ET4: Lithosphere-ocean-atmosphere (LOA) coupling

The team's research is centered on the coupling effects between geodynamics (deformation of the lithosphere and mantle dynamics), surface processes (alteration, erosion, transit, sedimentation), sedimentary basin dynamics and the evolution of environments, ancient climates and the oceans.

### ET6: INTERFACES Metal pollutants, interfaces with the environment and health risks

The INTERFACES team studies the environmental impacts of human actions and the interactions between the pollution of natural environments, social and political dynamics and risks for human health.

### ET7: Experimental (bio)geochemistry and modeling of the interactions between fluids, minerals and living organisms

The team is interested in acquiring thermodynamic and kinetic parameters on aqueous species and solid phases likely to control the trapping of CO<sub>2</sub> in dissolved or solid form in storage conditions, in order to achieve reliable numerical simulation of the reactive transport of CO<sub>2</sub> injected into natural reservoirs.

Main equipment	Low-temperature thermochronology 3D geomodellers (Gocad and BRGM geomodeller) High-resolution structural modeling (3D balancing) Geodynamic modeling	(thermomechanical with coupled surface processes) Geophysical modeling (seismology, gravimetry)	Range of relative and absolute gravimeters (including a quantum gravimeter) and a GNSS Potentiometric cells	Circulation or batch reactors to study reaction kinetics Plug-flow reactor Sapphire reactor
----------------	---	--	--	---

Partnerships

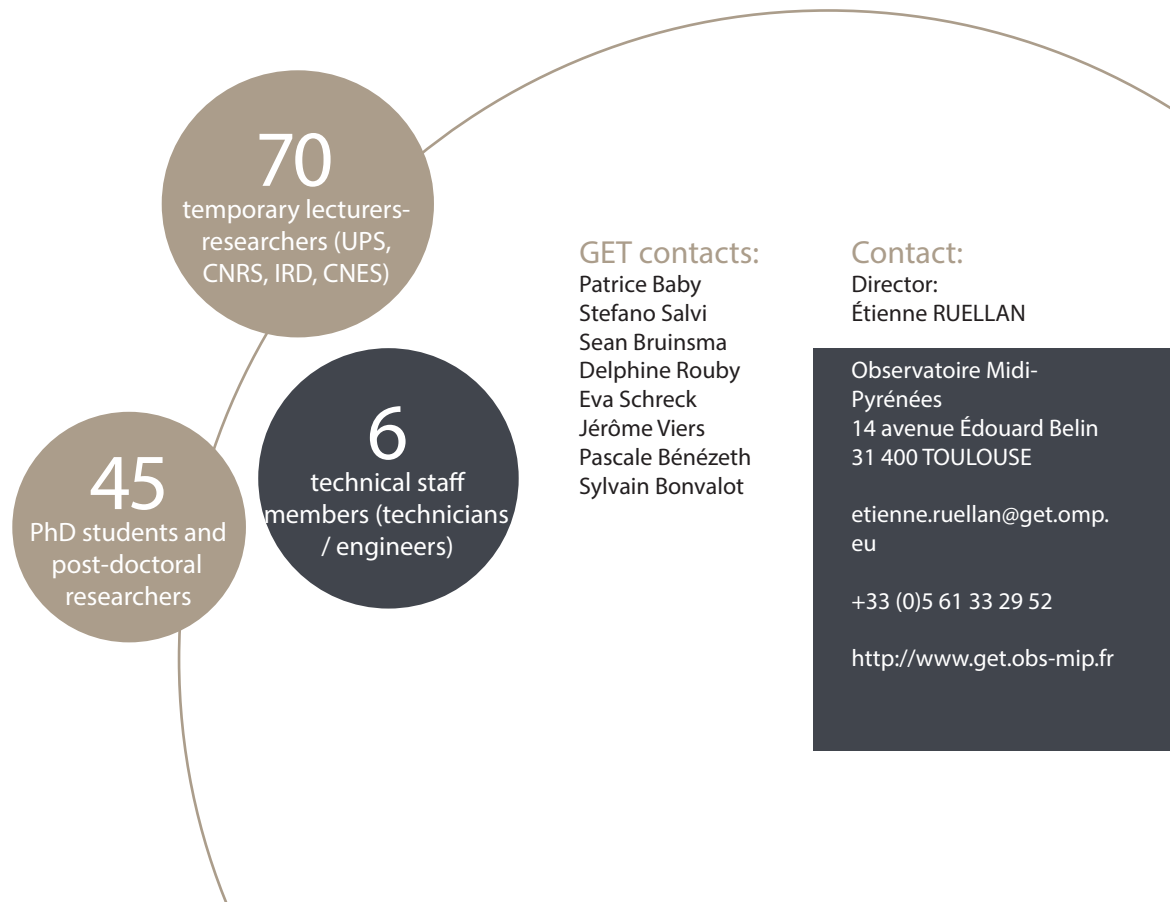
Industrial partnerships: YPFB, PERUPETRO S.A. (Peru), Midland Valley Inc, TOTAL, IFPEN, Engie, Schlumberger, Petrobras, Lafarge, EDF, BRGM

Institutional partnerships: UMR IDES (Paris XI), CEREGE, IGP, Geosciences Montpellier, ICMCB, École des Mines of Saint Étienne, École des Ponts, University of Reykjavik (Island), Munich and Munster (Germany), Columbia University (the USA), CNES, LaSalle-Beauvais Institute, EPN (Ecuador), UNSAAC (Peru), PUCP (Peru), UnB (Brazil)

Spearheaded by



GET in figures



GET contacts:

Patrice Baby  
Stefano Salvi  
Sean Bruinsma  
Delphine Rouby  
Eva Schreck  
Jérôme Viers  
Pascale Bénézeth  
Sylvain Bonvalot

Contact:

Director:  
Étienne RUELLAN

Observatoire Midi-Pyrénées  
14 avenue Édouard Belin  
31 400 TOULOUSE

etienne.ruellan@get.omp.eu

+33 (0)5 61 33 29 52

<http://www.get.obs-mip.fr>