



LA.TE. ANDES

A GEOSCIENCE TECHNOLOGY-BASED COMPANY



LA.TE. ANDES S.A. is a private-public company (**GEOMAP-CONICET**) with an advanced thermochronology and geochronology production and R&D center. It also develops strategical projects for and in collaboration with its clients, applying the scientific and technical know-how from its partners to reduce exploratory risk for the oil & gas industry and increase productivity in other geoscience-knowledge intensive industries, such as mining and geothermal energy.

It also collaborates with the scientific-academic sector to obtain data in several areas such as earth and natural sciences in general, archeology and materials sciences.

Initial economical viability was possible thanks to financial support received from National Scientific and Technological Promotion Agency (ANPCyT-FONTAR) and the joint work with international institutions meant to the creation of technology-based companies, such as Steinbeis-Transferzentrum (Germany) through TERRA-EXplore and Heidelberg University, involved in the quality assurance of **LA.TE ANDES** procedure to match international standards.

COMPANY PARTNERS



LA.TE. ANDES

PRIVATE



PUBLIC



Developed with the support of:



Supporting institutions and companies



UNIVERSITÄT
HEIDELBERG
ZUKUNFT
SEIT 1386



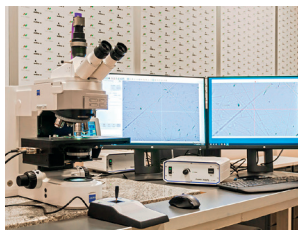
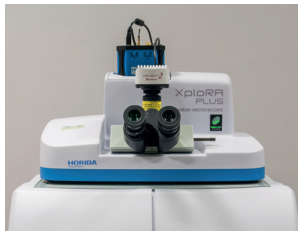
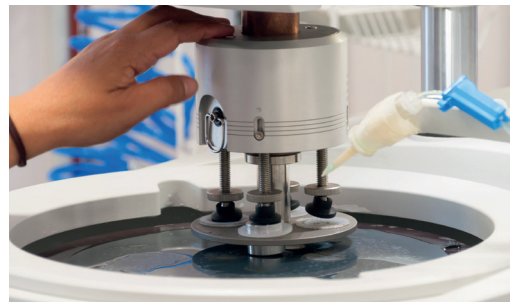


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LA.TE. ANDES is located in Vaqueros, Salta province, in the northwest Argentinian region. This location is strategic in relation to the principal Oil & Gas exploratory and production areas in South America. The thermochronology and Geochronology center aims to provide necessary services to reduce exploratory risks of hydrocarbons.

LA.TE. ANDES constitutes a unique technological, productive and R&D node in South America, carrying out the entire thermochronology and geochronology procedures, from mineral concentration to numerical temperature-time modeling and geological data interpretation. The neutron irradiation needed for fission track dating is performed in nuclear reactors in Argentina (RA3 reactor, and RA10 in the future), drastically reducing time needed for analytical procedures.





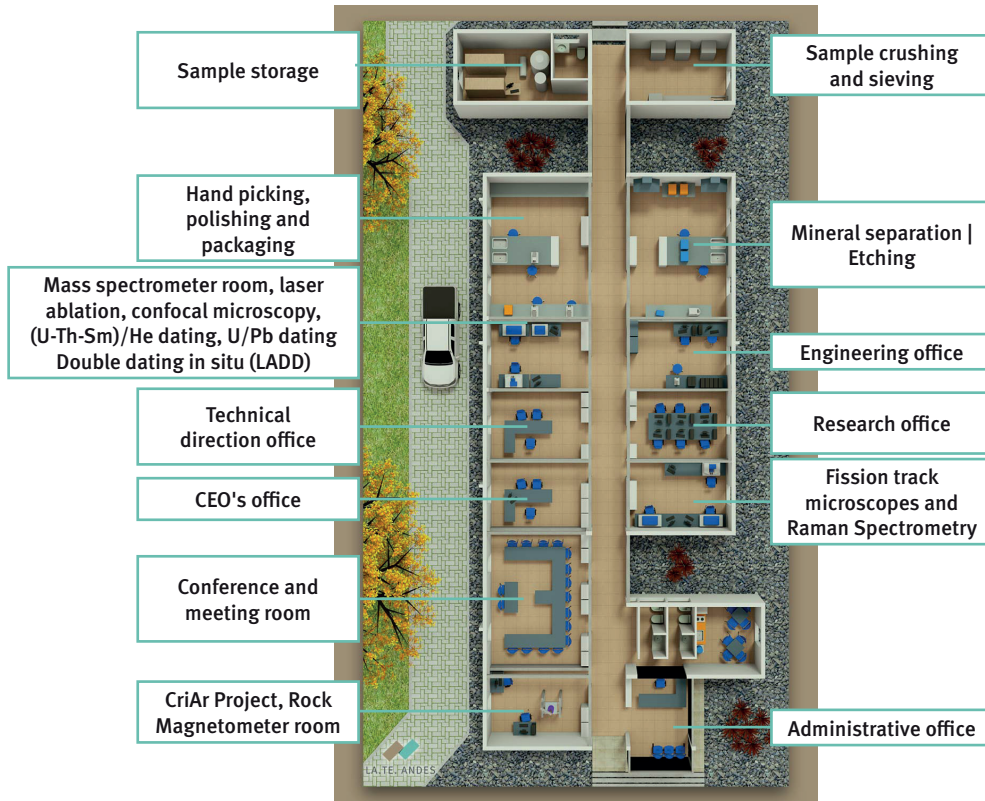
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Building Structure and Workflow

Processing and handling of samples according to strict international standards



LA.TE. ANDES is a matrix-type company, combining human and economic resources for the development of high impact projects, searching for solutions to specific geological problems. In this way, LA.TE. ANDES developed a cryogenic magnetometer system, the Cri.Ar project (in conjunction with CONICET - CNEA - Endeavour Ingenieria SRL) and Andino 3D®, a structural modeling software sourced in the FONSOFT financing line (MINCyT).

PRODUCTIVE UNITS				
 <p>Cron.Ar</p>		 <p>andino 3D</p>		 <p>Cri.Ar</p>
THERMOCHRONOLOGY GEOCHRONOLOGY			SOFTWARE	PALEOMAGNETISM
Dating			2D-3D-4D Structural evolution modeling	Superconductive Cryogenic Magnetometer
Fission-track analysis AFT-ZFT	(U-Th-Sm)/He analysis AHe-ZHe	U/Pb analysis	Andino 3D	Cri.Ar



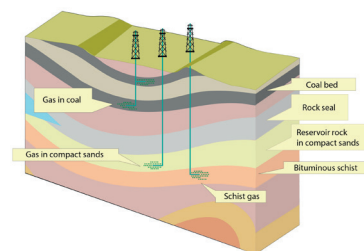
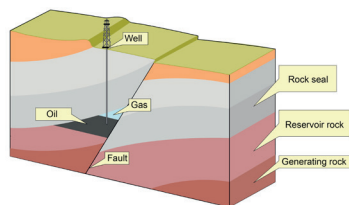
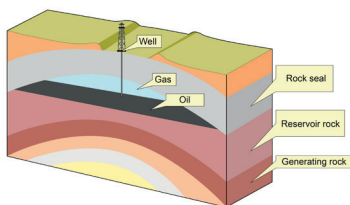
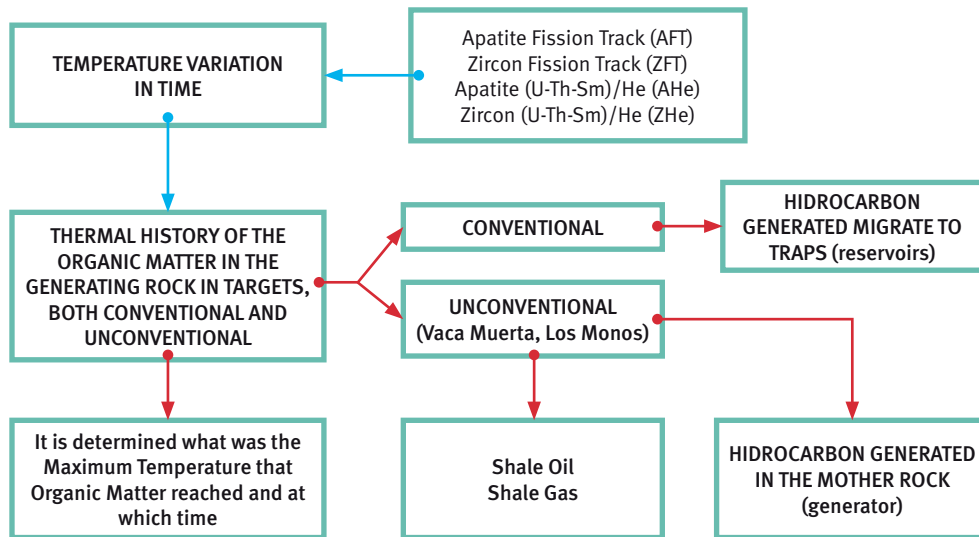
Cron.Ar

Thermochronology - Geochronology Fission track-(U-Th-Sm)/He -U/Pb



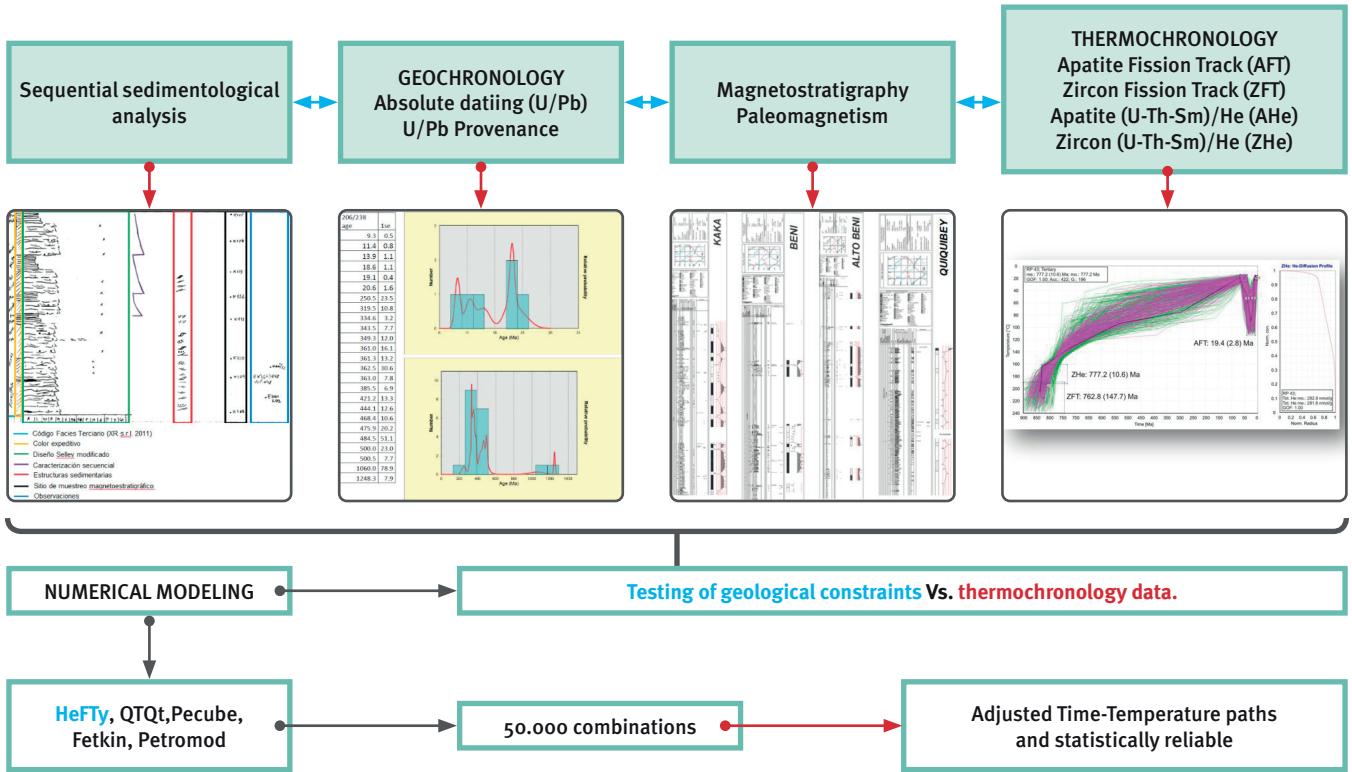
Thermochronology, in particular fission track and (U-Th-Sm)/He analysis in apatites and zircons, are a fundamental analytical tool for the determination of time-temperature paths. They allow to evaluate the conformation time of prospectable traps in conventional reservoirs (structural and combined traps) and the delimitation of better maturation perspectives areas in unconventional reservoirs (shale oil/gas). Additionally, this methods allow to determine whether temperature affected the organic matter from wich the oil and gas were generated.

The combination of thermochronometers (AFT-ZFT-AHe-ZHe), geochronometers, thermal maturity indexes (VR-TAI) and geological constraints, lead to a solid and reliable Reconstruction of the Thermal History in areas of interest



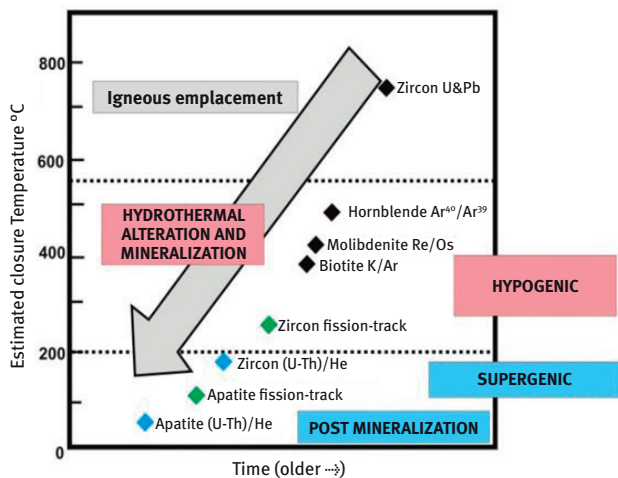


The combination of thermochronological-geochronological analysis with structural modeling tools, allows to precisely determine the inherent parameters with precision to the oil systems present in the areas under exploration or development stage

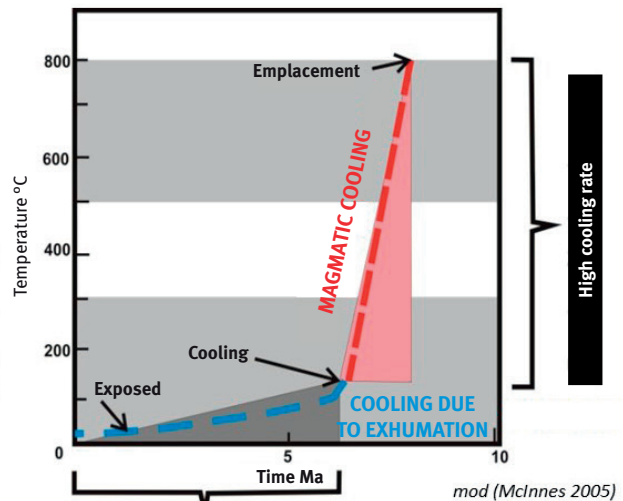


On the other hand, thermochronology and geochronology can be used in the assessment of mineral resources by determining the age and duration of mineralization processes, exhumation rates and mineral deposits erosion linked to intrusive bodies and preservation degrees in relation to exotic deposits.

Thermochronology. Porphyritic and epithermal systems. Time involved in mineralization processes. Cooling rate -erosion



Time-Temperature-Mineralization Relationship Combination with other geochronological/thermochronometric techniques



Cooling rate - type of mineralization

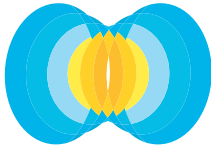


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Cri.Ar

Superconductive cryogenic magnetometer.



Cri.Ar



High resolution paleomagnetism serving the Oil and Gas Industry

Cryogenic Magnetometer for paleomagnetism measurements of rocks of exploratory interest. The equipment incorporates an automatic measuring system for 120 samples, an alternate field demagnetizer (AF Degausser) and a shielding oven for thermal demagnetization (T Degausser). All devices were developed collaboratively by the following institutions and companies.



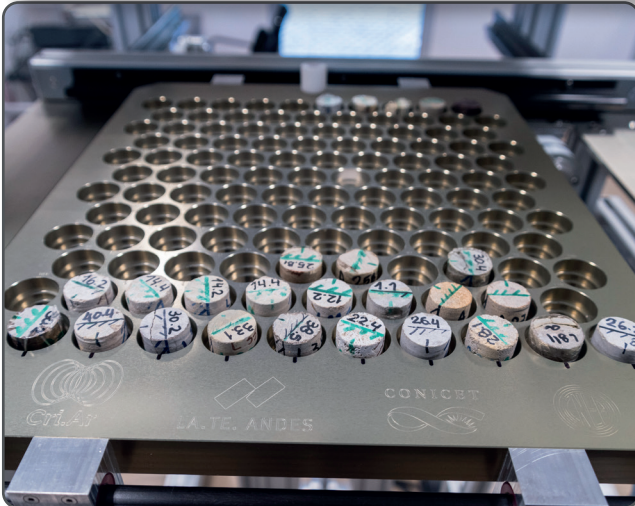
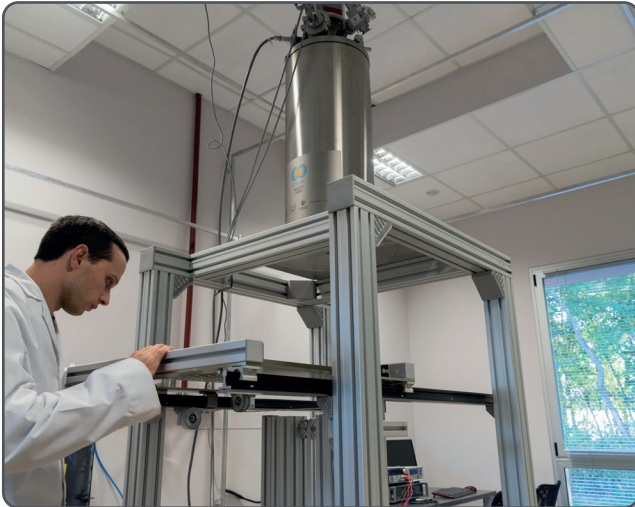
LA.TE. ANDES

CONICET



Comisión Nacional de Energía Atómica

ENDEAVOUR
Ingeniería





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Andino 3D • Integration Platform

2D-3D and 4D Structural Modeling software developed by LA.TE. ANDES
Structural Analysis Consultancy and Services



andino 3D

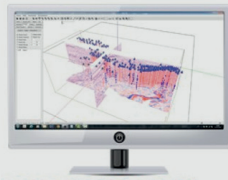


- Use of Thermochronological data in s-structural analysis
- Chronological evolution of fault-related anticline structures
- In-sequence and out-of-sequence deformation
- Structural Timing and growing-rate calculation
- Analysis of pre-existing structures control in Andean deformation.

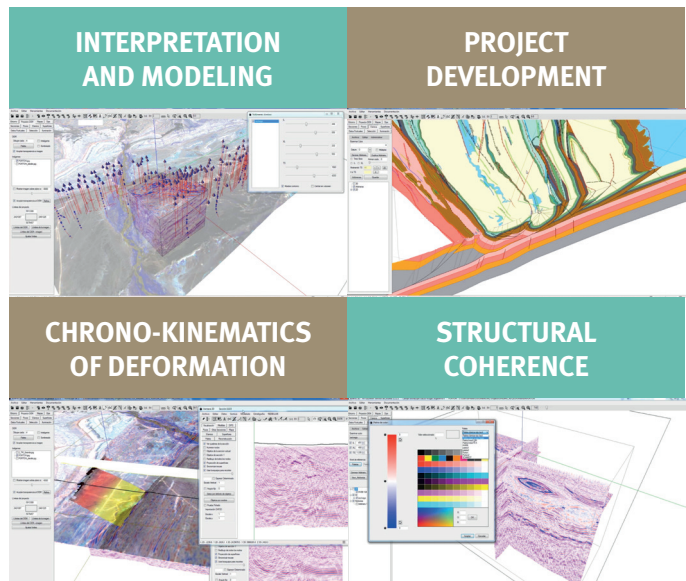
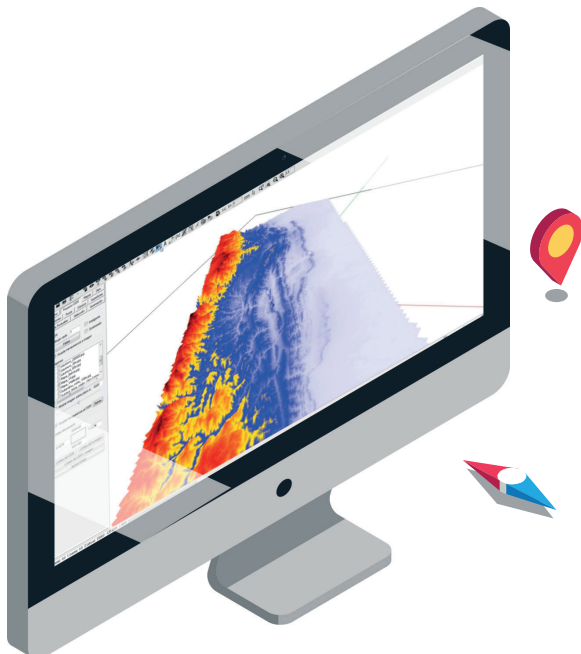
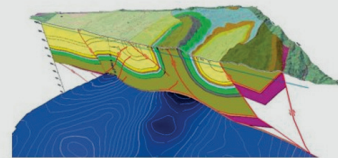
Sale of licenses
Renewal of licenses



Project development
and loading
Organizing information



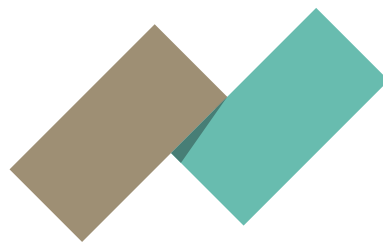
Structural consultancy. Structural
modeling using thermochronological
data sourced in LA.TE. ANDES





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LA.TE. ANDES S.A. offers its services to private entities in the field of Oil & Gas and mining, as well as entities within the academic field, with the purpose of evaluating geological processes in areas of strategic interest.