



SALTGIANT ETN – Field Geology Study of the Caltanissetta Basin (Sicily) architecture – ESR 4

Title Sicilian Basin Architecture
Duration 36 months
Expected start date October 2018
Host Institution Università di Palermo (Italy), - <http://www.unipa.it/dipartimenti/distem>

Primary Supervisor(s) Antonio Caruso, Attilio Sulli

Objectives

The Messinian Salinity Crisis was responsible for a huge accumulation of evaporites present in several Sicilian sub-basins experienced in different geodynamic conditions. The main goal is to acquire new insight from stratigraphic relationships between the evaporite series and the pre-Messinian sediments by carrying out detailed geological mapping of wedge-top basins of northwestern Sicily (Salemi-Calatafimi; Belice and Cimina) and the Hyblean plateau (Licodia Eubea). In the Caltanissetta basin, the evaporite deposits are thought to have slid basinwards, and thus to lie unconformably on the underlying pre-evaporitic sequences, the evaporites in the wedge-top basins are considered to be in place and to lie conformably on pre-evaporitic deposits. The basin-wide transport of evaporite deposits is one of the less-understood key issues in the formation of the MSG. Huge sedimentary units in the deep basins imaged in seismic survey might be composed of re-sedimented evaporates. Petrophysical and geochemical investigations on onshore outcrops and stratigraphic relationships, compared with seismic profiles already available (ENI-SIRIPRO), could give new efforts of the geodynamic evolution of the Sicilian Basin. This part of the research will be carried out in collaboration with ESR 3unit and ITALKALI, the non-academic partner of this ESR.

Expected results

1) Geological maps of marginal basins (i.e. Salemi - Calatafimi; Belice, Cimina, Licodia Eubea); 2) Reconstruction of Stratigraphy in these marginal areas; 3) comparison between marginal basins of Balearic promontory with those of Sicily (i.e. Salemi - Calatafimi; Belice, Cimina and Licodia Eubea) in collaboration with ESR 3.

Planned secondments

Provided by SALTGIANT partners to ESRs; duration 1-3 month each

S1 Months 10-12 **ITALKALI** (Palermo, Italy) (C. Schembri for training on the fundamental skills involved in salt ore prospection and exploitation: geological mapping, lithological correlation between bore-holes and subsurface and surface outcrops); **S2** Months 27-29. CNRS (Montpellier, France) (J. Lofi for the interpretation of seismic profile from Balearic basin comparing it with Sicilian outcrops).

Keywords Sicilian Basin, Evaporites, Geological mapping, Stratigraphic relationships, Seismic profiles.

Application Send application via : www.ipgp.fr/saltgiant

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