

Open call for a PH.D project @ University of Pavia

Dipartimento di Scienze della Terra e dell'Ambiente

Project title: Linking the Exposed belt to the Buried one: the Pavia Apennines – LET2BE

Tutors: Andrea Di Giulio – Giovanni Toscani

Related activities: CARG project – Foglio 160 Pavia

Deadline for applications 28th July 2023

In the framework of the CARG project (more information [here](#)), the scientific activities related to the implementation of the “Foglio 160-PAVIA” are expected to start in fall 2023.

We are looking for a highly motivated candidate that will deal with both surface (field) and subsurface data in order to merge them in a coherent and up-to-date interactive product.

The candidate activities will be multidisciplinary, including field mapping, seismic reflection profiles interpretation and lab analysis and can be briefly summarized as follows:

- 1) Search and collection of old/unpublished field data covering the outcropping sector of the Northern Apennines in the Pavia sheet (CARG Project).
- 2) Review and re-organization of the old geological formations and lithostratigraphic units according with the new criteria and guidelines of the CARG project
- 3) Field data collection: map some key stratigraphic surfaces in the exposed part of the Northern Apennines in the Pavia and (partly) Piacenza Provinces (roughly between the Staffora and Tidone valleys)
- 4) Subsurface data analysis: map the same stratigraphic surfaces in the subsurface of the Pavia Province by interpreting the available seismic reflection profiles and well data
- 5) Sample some key clastic units in the outcropping part of the belt in order to investigate their thermal and burial history through diagenetic modelling and low-T thermochronologic analysis
- 6) Include outcrop and subsurface results in a 3D tectonic-stratigraphic model of the studied part of the belt
- 7) Perform a restoration of the obtained model including also the burial estimation of the exhumed units in the exposed sector.

The candidate will be supported by a team of specialists that will follow and tutor him/her during the different activities.

The expected results of the project are (i) an improvement of the knowledge of the structural and stratigraphic setting of the boundary between the outcropping Apennines belt and the Po alluvial plain in the Pavia region by merging old and unpublished data with new field studies at a detailed level (1:10.000 scale), (ii) a reconstruction of the tectonic-stratigraphic evolution of the Emilia arc western sector, where variable displacements are recorded along the Pede-Apennine thrust and

where complex interactions between Apennines thrust and inherited tectonic lineaments have been proposed in the past, including a focus on a possible seismogenic source (in the study area a “debated” seismogenic source is indicated by the DISS-Database Italiano Sorgenti Sismogenetiche).

The candidate will collaborate and will be involved also in the activities strictly related with the CARG project, including the database construction and the cartographic products.

More information can be provided through direct contacts with

Andrea Di Giulio (andrea.digiulio@unipv.it)

Giovanni Toscani (giovanni.toscani@unipv.it)

Links to the call

<http://phd.unipv.it/bando-39/> (Italian)

<http://phd.unipv.it/call-39/> (English)

More information about the Phd program at Earth and Environmental Sciences Department of the University of Pavia are here <http://phd-dsta.unipv.it/>