

FORM PER PROGETTI BANDO DOTTORATO

1. Project title

Interaction of axial and transverse fluvial systems: sedimentary record and implications for subsurface characterization

2. Proposer

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|----------------|-----------|
| Surname | Colombera |
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3. Research Unit

| Surname | Name | Institution |
|----------------|-------------|--------------------|
| Di Giulio | Andrea | DSTA-UNIPV |
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4. Key words

(Max. 5 – at least 2)

Sedimentology; Sequence Stratigraphy; Sedimentary Petrography; Palaeosol; Quaternary

5. Abstract

(Max. 1.500 characters with spaces)

The project aims to elucidate the ways in which axial and transverse river systems fed by contrasting sediment sources respond to climatic and tectonic drivers, and how these responses are preserved in both the fluvial stratigraphic record and the geomorphology of alluvial landscapes. The PhD candidate will undertake an integrated study of Quaternary sedimentary successions and landforms across an east-west-oriented transect of the central Po Valley (N Italy), where tributaries draining the Alps and the Apennines meet the throughgoing River Po. The study will bring together results of: (i) field-based surface geomorphological and sedimentological investigations; (ii) analyses of remote-sensing datasets, historical documents and archaeological evidence; (iii) investigations of the sedimentology, stratigraphy, provenance and palaeopedology of subsurface successions seen in borehole and geophysical data. By integrating this broad range of geological datasets, the study will enable a detailed characterization of the co-evolution of the different river systems at different spatial and temporal scales; in turn, this will allow the PhD candidate to address a series of fundamental and applied research questions, relating to the relative importance of tectonic, climatic and eustatic controlling factors on the continental sedimentary record and to the architecture and heterogeneity of alluvial groundwater aquifers of the Po Basin.