UNIVERSITÀ DI PAVIA
DIPARTIMENTO DI SCIENZE DELLA TERRA E DELL'AMBIENTE
DOTTORATO DI RICERCA IN SCIENZE DELLA TERRA E DELL'AMBIENTE

FORM PER PROGETTI BANDO DOTTORATO

1. Project title

Plio-Pleistocene tectonic and climatic effects on the groundwater resources in the Po Plain along the Southern Alps boundary

2. Proposer

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4. Key words
(Max. 5 – at least 2)

Sedimentology; subsurface data; petrophysical models; Plio-Pleistocene tectonic activity; paleotopographies

5. Abstract
(Max.1.500 characters with spaces)

The research project aims to map and characterize the Plio-Pleistocene deposits located in the upper Po Plain at the edge of the exposed South Alpine chain, and to correlate them with outcrops of the South Alpine chain itself. Along the edge of the alluvial plain, there are indeed sporadic but significant outcrops of Plio-Pleistocene deposits uplifted by recent tectonic events that can be correlated with the alluvial deposits filling the Sothern Alps foredeep basin. The collection of field data in the area immediately west and southwest of Garda Lake, of geophysical data from the lake, and the availability of subsurface data from the Brescia province—thanks to a collaboration with A2A—allows (i) to reconstruct the geometries of the Plio-Pleistocene deposits that filled the incisions formed during the Messinian Salinity Crisis and then overfilled the basinand (ii) to characterize (lithologically, petrophysically, and chronologically) the continental deposits. The resulting geological model will provide a more detailed reconstruction of this geological setting and of the aquifer systems in a highly urbanized and industrial area, where sustainable water resource management are crucial. The availability of AEM geophysical data and well stratigraphies will also allow to undertake a reconstruction of the subsurface with a detail difficult to achieve using seismic reflection profiles only, thus enabling a description of the influence that paleotopographies have exerted on the evolution of the fluvial network up to the present day.