



## **Micromorphological and mineralogical aspects of “plinthitic paleosols” in the mediterranean region: examples from the coast of western Liguria (northern Italy).**

### **0.1 I. Rellini (1) and L. Trombino (2,3)**

(1) Territory and Resources Study Department, University of Genova, Genova, Italy  
(Rellini.Ivano@dipteris.unige.it)

(2) Environmental Processes Dynamic Institute, National Council of Research, Milano, Italy

(3) Earth Sciences Department, University of Milano, Milano, Italy (Luca.Trombino@unimi.it)

The western Liguria is characterised by the presence of marine and continental paleosurfaces, having various elevations and ages, which are generally related to the repeated transgression/regression cycles due to the Late Quaternary tectonics and climatic fluctuations. In the framework of a larger study aimed at characterising the Quaternary evolution of several selected of the Ligurian coast, two old geomorphological surfaces and their associated paleosols have been identified and characterised.

The first evidence is located in the High Plain of Manie. The described paleosol is strictly associated with schists (quarzitic and sericitic) and it was affected by strong pedogenetic phases that lead to the development of a complex profile which shows characteristics like actual tropical areas soils on deeply weathered rocks, being characterised by the presence of a deep saprolite and thick plinthitic horizon. Furthermore, this paleosol is related to the top paleosurface, which shapes the plateau and which dates back to the Pliocene-Pleistocene boundary; this hot and wet period is also responsible for the cockpit shape of the biggest karst sags and for the presence of "Terra Rossa" paleosols, outcropping in the surrounding area on dolomite bedrock.

The second evidence is represented by relict terraced landforms of marine origin with very weathered marine and continental deposits on their preserved surfaces. The trun-

cated top paleosol is characterised by a thick petroplinthitic horizon. Also in this case the geomorphological context suggests a Late Pliocene-Lower Pleistocene age for the terrace and thus the paleosol could develop in a warm and humid tropical-like climate.

The micromorphological evidence supported by the mineralogical analyses, suggest a polygenetic origin for both of the profiles, affected by different superimposed processes, acting in different environmental conditions on distinct parent material: in fact they show evidence of relict properties and transported materials derived, at last partially, from the destruction of older surfaces. In conclusion, the work on plinthitic profiles of the western Liguria substantiate once more the relevance of such paleosols as indicators of environmental change during the Pliocene-Pleistocene transition, thanks to their sensibility to variations of the lithosphere, biosphere and atmosphere equilibria.