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SEMI-AUTOMATIC CLASSIFICATION OF LANDFORMS AS A TOOL TO STRESS GEOARCHAEOLOGICAL ISSUES: AN EXAMPLE FROM THE METAPONTO COASTAL BELT, SOUTHERN ITALY

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The interplay between man and environment in historical times has been the subject of many scientific works since the '80s. Results from these studies have revealed that the influence of the landscape features on the human activities and choices have been often significant as well as the anthropic pressure on the natural systems has been remarkable since Greek-Roman times. In this work, we will try to extrapolate such mutual relationships by analysing the spatial relations between archaeological sites and maps deriving from GIS-based semi-automatic procedures of extraction of landforms integrated by geomorphological analyses. Geoarchaeological research has been carried out in the frame of the multidisciplinary MeTIBas project (the Italian acronyms for Innovative Methods and Technologies for the Cultural Heritages in the Basilicata region), funded by the European Community. The study area extends on the southernmost part of the Bradano Foredeep, southern Italy and roughly coincides with the territory of the Greek settlement of *Metapontum* and its *Chora* (the area of influence and activity of the ancient colonists). Archaeological investigations, regarding about 900 sites, consisted of the re-examination of literature data and new field surveys. The study area borders the front of the chain to the north-west. Such a part of the foreland basin underwent tectonic uplift since the middle Pleistocene. The Plio-Quaternary clayey bedrock is unconformably overlaid by a middle-upper Pleistocene regressive, coarsening upward, marine succession forming a staircase of marine terraces ranging from about 400 m a.s.l. to 10-15 m a.s.l. in elevation and from ~300 ka to ~30 ka in age. The top of the youngest and lowermost coastal wedge is the present-day Metaponto coastal plain. Continental deposits belong to alluvial environments whereas transitional deposits belong to delta and beach environments. Therefore, the study area results of three sub-areas characterized by different morphological features: i) coastal plain and present coastline, ii) alluvial plains of major rivers, and iii) interfluvial sequences of marine terraces. The lateral continuity of the terrace surfaces is interrupted by the valleys of both main rivers and minor drainage networks. In the whole coastal sector, the rivers show a meandering pattern running on floodplains embanked in the Pleistocene marine terraces, sometimes reaching the clayey bedrock. Along the flanks of the valleys, fluvial terraces are arranged in a couple of orders. The backshore area of the Metaponto coastal plain was featured by the presence of wide limno-palustrine environments, reclaimed during the first decades of the last century. Topographic features of the mapped landforms represent the key to extract the rules for the automatic classification of the landforms of the study area. Site distribution and relationships with landscape elements allows us to investigate the settlement patterns and human activities and choices.

