



## **INFLUENCE OF WEATHERING, TEXTURAL AND GEOSTRUCTURAL FEATURES IN SLOPE STABILITY ANALYSES FOR LIMESTONE OPEN PIT QUARRIES**

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The Murge plateau (Apulia, south-eastern Italy) is characterised by a Mesozoic sedimentary succession (exceeding 6000 m in thickness) of regularly stratified fine-grained limestones overlain by Plio-Pleistocene transgressive calcarenites deposited in shallow and agitated marine waters. This particular geologic setting has favoured today, as in the past, an intense extractive activity, principally localized in open pit quarries. Although Italian legislation provides quarry restoration at the end of exploitation, many quarries were abandoned causing relevant environmental alteration and damages, and high risk situation for slope instability. Factors controlling the different types of landslides (slides, falls, topples, etc.) are described. In particular, the influence of textural and geostructural features on slope stability in carbonate rock masses affected by karst are analysed. Examples of rock slope failure complex mechanisms are illustrated at different scales. A new rock mass classification method for engineering design and a simple theoretical model for slope stability assessment is proposed.