

## **Hydropedologic patterns of escalic soils in cultivated and abandoned vineyards**

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The construction of vineyard terraces was conducted extensively for many centuries in the Mediterranean area. However, the use of this technique has direct influences on a hillslope environment. Both artificial topographic transformation and frequently agricultural use have a strong impact on terrace soils. Hydromechanical properties have been scarcely investigated. They can change due to several terrace construction techniques, ploughing and particularly abandonment. These changes can cause the collapse of terrace walls due to modifications in the inner drainage behaviour of the terrace and increase the susceptibility to failure of a terraced slope. To determine differences in hydropedological water fluxes of escalic soils, infiltration and saturated hydraulic conductivity in 25cm, 50cm and 100cm were measured on defined Unique Condition Units (UCU) in the Vernazza catchment in Cinque Terre, Italy. The determination of soil texture and soil skeleton supported the information of the hydropedologic information. Moreover, shear strength of the soil in the three depths was estimated with a light torvane device and compared with the texture and the hydrological values. The results of our study indicate that escalic soils in vineyards in a Mediterranean torrential catchment show certain hydropedologic patterns under different substratum and distinct agricultural land cover conditions. The latter is defined by both species-related coverage of distinct crop plants and status of cultivation or abandonment respectively. These results depict the fundament for the application of physically-based landslide susceptibility modelling on the terraced landscape of the Vernazza catchment. The hydropedologic patterns determined in our study are expected to represent the conditions of water fluxes in the soil better and make the results of landslide susceptibility models more reliable.