HYDROGEOLOGY OF OGLIASTRA AND BARBAGIA DI SEULO "*TACCHI*" (CENTRAL AND EASTERN SARDINIA)

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Field data surveyed in the "Tacchi", the carbonatic plateau mainly characterized by dolostones located in a wide region of the central and eastern Sardinia, has been used to develop a conceptual reference model and to test the applicability of Mangin's method (Mangin, 1970a) as well as his karst system classification (1975) to the mesozoic carbonate sardinian aquifers, in order to achieve a better understanding of their behaviour.
In this work, geologic, structural and hydrogeological data of the selected Tacchi has been used to describe their lithostratigraphy, hydrostructures, fracture permeability and karstic features of hydrogeologic relevance. All these data collected in a database has been used to implement a GIS project in order to analyze them.
The geological and structural features allowed to define the geometry of each aquifer, in order to elaborate a conceptual reference model to assess its permeability (Louis, 1974) based upon layering style of carbonate rocks and related fracturation patterns, according Vialon et al. (1976). A confrontation of these parameters and those deriving by the processing of hydrogeological data according Mangin (Mangin 1970a), lead to test the applicability of Mangin's classification of karstic systems (Mangin 1975) for mesozoic karstic systems of central and western Sardinia, to obtain informations about their behaviour.
This study led to recognize in each Tacco considered the upper high permeable unsaturated karst, mainly composed by up to metric layers of dolostones, and the lower saturated karst composed by up to decimetric limestones and dolomitic limestones. In the Tacchi there are some more or less weakly depressed morphostructures (poljie) in which the rainfall and streamflows are gathered and where infiltration occurs. The springs location is clearly imposed by dip direction of carbonate layers, by the orientation and conductivity of joints, and by "undefined permeability limits" (sensu Civita, 1973). Can be also recognized a correlation between Mangin's parameters (Mangin, 1970a), geologic, tectonics and hydrogeological features of all the systems related to each spring that allow to consider Mangin's method and his karstic systems classification (1975) useful mean to study and characterize mesozoic carbonatic aquifers of central and eastern Sardinia.

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