



Pedemountain karst systems of the Asiago Plateau (NE Italy): a case study from Marostica

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Marostica karst systems develop within SE pedemountain sectors of the Asiago Plateau (Venetian Prealps –NE Italy). Here, Cretaceous-Miocene terrains outcrop and are mainly represented by calcareous, arenaceous-marly and arenaceous-conglomeratic formations affected by basaltic events. Within this area more than 20 caves are known. Preliminary studies that we have carried out in collaboration with other members of the GEO CAI Speleological Group of Bassano del Grappa, seem to demonstrate as their speleogenesis is due to complex interactions between karst and fluvial processes suggesting different roles played by chemical and physical components. In this area, caves and aquifers setting is also undoubtedly related to the very complex tectonic who has encouraged the establishment of a widespread karstification. Specifically, the Cenozoic sedimentary sequence had a plastic behavior in the development of a SE verging monocline, but as it is punctuated by frequent volcanic eruptions (3 main phases have been well recognized) all took a rigidity distinguishable in numerous faults. Caves constitute a constellation of small cavities but hydrological and geomorphological evidences drive us to hypothesize a more wide underground complex and hydrogeological connections between active caves and important springs. It is worth emphasizing that in this area the hydrogeological system is complicated by human perturbations and in some cases, the negative interaction between land management and karstified aquifers represents a still unresolved problem. This high vulnerability of water resources in this area constitute the most important impulse for our researches. The study program started with the elaboration of geological, structural, geomorphological and hydrological GIS-maps whereas, hydrogeological investigations (i.e. tracer tests) constitute the bulk of the second research step. This contribution presents the preliminary hydrogeological model elaborated on the basis of these studies providing some considerations about the aquifers vulnerability in this area.