POLITECNICO
DI TORINO
Dipartimento
di Ingegneria dell'Ambiente del Territorio
e delle Infrastrutture

Prof. Bartolomeo VIGNA

Curriculum of Prof. Bartolomeo Vigna

Bartolomeo Vigna is an Associate Professor in Applied Geology at the Department of Environmental, Land and Infrastructure Engineering at the Turin Polytechnic. He was born in Mondovì on 11/26/1953 and he graduated in Geological Sciences at the University of Turin in November 1981.
From May 1984 he has been appointed University Researcher at the Turin Polytechnic at the Department of Georesources and Land. Since November 1998 he moved to the role of Associate Professor at the same institution, having won a public competition in Applied Geology.
His scientific production consists of over 200 publications in national and international journals, conference proceedings and some specific monographs. In detail, the main research topics concern topics of Applied Hydrogeology with particular regard to the study of springs, monitoring of aquifers, artificial tracers and slope stability in relation to the hydrogeological situation. It also deals with surveys and geological and hydrogeological cartography.
The topic relating to the springs concerns a study that began in the early 90s and is still ongoing. The research is focused on the high frequency monitoring of over 15 springs located in the western and southern Piedmont. These springs have been equipped with a series of data-logger, installed by the writer, which are now kept in operation also with the contribution of Arpa Piemonte. The study concerns a series of aquifers characterized by permeability and hydrogeological situations which feed springs partially captured for drinking water use. In this context, research was carried out on snow melting processes, which are fundamental in feeding aquifers in mountainous areas. An innovative instrumentation, which should be patented, has been created in order to quantify and evaluate these processes over the time.
The study on artificial tracers mainly concerned the experimentation of an optical bleach (Tinopal CBS-X) and which is now commonly used in tests for studies of springs captured for drinking water use, being a fluorescent dye that is barely visible to human's sight.
Together with other researchers from Polytechnic, he developed a new methodology for assessing the vulnerability of sources' pollution, called VESPA.
With other researchers from the Department of Earth Sciences of the University of Bologna, he led a series of researches concerning the conceptual models of the aquifers set in the chalky clusters.
Since 1990s, he began a research together with ENI geophysicists with regard to a large sector of central-southern Piedmont aimed at defining the stratigraphic and structural order of the Messinian and Plio-Pleistocene succession of the Piedmont Tertiary Basin. Furthermore he collaborated with the CNR of Turin and the Department of Earth Sciences of Turin for the drafting of the new geological cartography of the Piedmont Region at a scale of 1: 250,000.

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Together with the Corr Tek hydrometry technicians, he installed in the Bossea Cave a new experimental instrumentation for real-time monitoring of the main hydrogeological parameters of an aquifer (flow rate, temperature and electrical conductivity of the water).
In the same cavity, together with INRIM, Arpa Piemonte and the CAI Scientific Station, he has created a new laboratory, called the “Bossea Climatological Research Center” with the aim of studying the effects of climate change on the subsoil.
Since 2016 he has been collaborating with Arpa Piemonte both to monitor numerous hypogeal glaciers in the Ligurian and Maritime Alps, as well as to the study of the relationships between deep gravitational deformations and hydrogeological structure in the upper Susa Valley.
He is the contact person for the Paleolab laboratory of the DIATI Department of Excellence in Climate Change. He is the head of the Hydrogeology section of the Bossea underground karst laboratory, which is considered the most important underground laboratory for the study of karst hydrogeology in the national territory.
The scientific commitment was also expressed through participation in activities related to over 20 research conventions or research programs, of which he has been the scientific manager. Several projects have been stipulated with the Piedmont Region, including the definition of new methodologies for the delimitation of the protection areas of the springs and the monitoring of spring water resources in the Piedmont area.
Between 2013 and 2015 he was the scientific manager of the ALIRHYS Project within the IV ALCOTRA Program 2007-2013. Other research projects were carried out with the University of Basilicata, with Anas (New tunnel of Colle di Tenda, assessment, monitoring and controlling the risks induced by the construction of underground works), with aqueduct bodies (Identification of protection of the springs captured by the Langhe and Cuneo Alps Aqueduct), with private companies (Hydrogeological study in the underground quarry area of Moncalvo d'Asti), as well as with the Research Projects of the University and of the National Group for the Defense from Disasters Hydrogeological of the CNR.
He teaches in the courses of Geology and Civil Protection of the Degree in Civil Engineering, of Applied Geology for the Degree Course in Environmental and Territory Engineering. He has been a lecturer for several years of the "Research and capture of new springs" course at the Master in Water Engineering for drinking and industrial use.
Since 2014 he has been supervisor of 64 first and second level degrees in Environmental and Land Engineering and Civil Engineering.

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