

Curriculum Vitae

Giorgio Caramanna

Address: Via dei Correr, 13
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Birth date: 16 February 1970

Citizenship: Italian

Marital status: Single

Education: 1988
Diploma in Mathematical Science (Score 56/60)

2001
Master's Degree in Geology
University of Rome "La Sapienza" (Score 107/110)
Thesis title: "Hydrogeology, Hydrology and Morphology of sinkholes in the Latium Region"
Topics: Exploration and study of flooded sinkholes by scientific diving and by ROV (Remote Operated Vehicle) techniques.

2009
PhD in Geology
University of Rome "La Sapienza"
Dissertation title: "Field study by means of diving techniques and lab simulation of a submarine natural analogue to analyze the effects of potential CO₂ leakages from a sub-seabed carbon dioxide storage site".
Topics: Global warming and related mitigation strategies, CCS methods, field study of an underwater CO₂ natural analogue (Panarea Island – Italy), data collection and sampling (fluids, sediments, mineral deposits, biological samples) by means of scientific diving techniques, laboratory simulation of gas plume in liquid environment, lab analysis of fluids (GC techniques), and solid deposits.

2006
Professional geologist qualification (score 141/150)

Languages spoken: Italian (mother tongue) and English

Professional Experience: *April 2006 – present*
Geologist, Freelance professional activity
Duties: Geological and hydrogeological survey, geotechnical studies.

June 2007 – April 2009
Department of Earth Sciences, University of Rome “La Sapienza” (UNIROMA1)
Geologist – Scientific Diver
Duties: data collection and analysis, underwater geological survey and sampling, photographic and video documentation, use of sonar and ROV techniques for underwater gas detection, development of monitoring techniques for underwater gas leakage.

April 2006 – March 2007
Italian National Institute of Geophysics and Volcanology (INGV)
Geologist – Scientific Diver
Duties: Underwater geological study (Scuba diving techniques) of volcanic gas emissions in the Aeolian Islands (Southern Tyrrhenian Sea).

January – March 2006
Department of Earth Sciences, University of Rome “La Sapienza” (UNIROMA1)
Geologist – Scientific Diver
Duties: Underwater data collection and analysis, fluids sampling and photographic documentation of undersea gas vents.

November – December 2005
Central Institute for Marine Research (ICRAM)
Scientific Diver
Duties: Mooring and monitoring of a sea tide gauge and subsequent data elaboration.

May 2004 – October 2005
Italian National Geological Survey (APAT)
Hydrogeologist
Duties: Geological survey, GIS database on borehole data and water wells data, study of sinkhole genesis in Italy.

March – August 2004
Italian National Institute of Geophysics and Volcanology (INGV)
Scientific Diver and Geologist/Consultant for the “Geochemistry Laboratory”
Duties: Underwater geological study (Scuba diving techniques) of volcanic gas emissions in the Aeolian Islands (Southern Tyrrhenian Sea), lab analyses of gas and water samples using chromatographic techniques.

September 2003

Italian National Research Council (CNR)

Scientific Diver during a research cruise near Panarea Island

Duties: Underwater collection of geological and biological samples, deployment of underwater instruments.

November 2002 – July 2003

Italian National Institute of Geophysics and Volcanology (INGV)

Scientific Diver and consultant for the “Geochemistry Laboratory”

Duties: Underwater geological study (Scuba diving techniques) of some volcanic gas emissions in the Aeolian Islands (Southern Tyrrhenian sea), lab analyses of gas and water samples using chromatographic techniques.

June 2002 – August 2003

Italian National Institute for the Energy and Environment (ENEA)

Scientific Diver

Duties: Underwater deployment of data logger for sea level monitoring (Gaeta – Central Italy).

March – August 2002

Roma TRE University of Rome

Hydrogeologist

Duties: Hydrogeological study of the regional aquifer in the city of Rome and in neighbouring areas (Central Italy).

April 2002

Guidonia Scientific High School

Teacher

Duties: Special teaching about the Hydrogeological study by scientific diving techniques of flooded sinkholes in Central Latium (Italy).

Other experience:

2000 – present

Underwater exploration and survey of several flooded caves and sinkholes in Italy (seawater and freshwater)

March 2009

Instructor on the scientific use of small observation class ROVs during the Ice Diving session for European Scientific Diving certification (INNOFOCUS – Finland)

June 2007

Summer School (INNOFOCUS – University of Helsinki) in Tvarminne Zoological Station (Finland) on biological and geological sampling by means of scuba diving techniques

February – June 2004

Italian Geological Survey (APAT)
Research Stage on the study of some flooded sinkholes in Central Italy
Duties: Geological and Hydrogeological survey and sampling with sonar and scuba diving techniques

June 2003

Underwater sampling of some speleothemes (stalagmites) in a flooded cave in Tuscany (Central Italy) with ENEA

January 2003

Underwater sampling and video survey of some flooded sinkholes in Tamaulipas Region (Mexico) with the University of Texas at Austin

February 2001

Water sampling in some flooded caves in Florida (USA)

2000

Geological survey of a sector of the Italian Apennine

Achievements:

Scientific supervision and writing for documentaries

Motor boats and sailing boats Skipper licence (Italian Government)

Small boat operations, navigation and maintenance

ROV pilot training on VideoRay systems

Medic First Aid experience

Commercial diver, Level 1
IDSA (International Diving Schools Association)

Advanced European Scientific Diver
(INNOFOCUS – Finnish Government)

Scientific Diver
ISSD (International School for Scientific Diving - Italy)

Assistant Instructor, Padi

Trimix Diver, IANTD

Intro. Cave Diver, National Speleological Society

Scuba Diver since 1992; more than 1,100 dives and 800 hours of scuba activity

Underwater guide and assistant for scuba courses since 1995

Publications in English:

Caramanna G., Malatesta R., Rosa C. (2001) **“Scientific utilization of ROV Technology by the University of Rome”** Proceeding of Underwater Intervention 2001, Tampa, FL, USA

Caramanna G. (2001) **“Scientific utilization of Scuba Diving and ROV Techniques in an inland flooded sinkhole in the Latium region (Central Italy) for the hydrogeological and geochemical study of the karst water resource”** *Geitalia 2001* – 3° Forum Italiano di Scienze della Terra, Chieti, Italy, 5-8 September 2001 (poster and abstract)

Caramanna G. (2002) **“Cave Diving for scientific purposes in the world’s deepest sinkhole”** 2002 Underwater Speleology – Bulletin of the Cave Diving Section – National Speleological Society (USA). Vol. 29 n.1 – 2002, pp. 4-8

Gary M. O., Sharp J.M , Caramanna G., Havens R. S (2003) **“Volcanically influenced speleogenesis: forming el sistema Zacaton, Mexico and Pozzo del Merro, Italy, the deepest phreatic sinkholes in the world”** Geological Society of America – Seattle Annual meeting, 2-5 November, 2003

Caramanna G., Bortoluzzi G., Cardellini F., Cinti D., Galli G., Pizzino L., Quattrocchi F., Voltattorni N. (2004) **“Geochemical and geomorphological study of some submarine volcanic gas vents around the island of Panarea (Aeolian Islands – Southern Tyrrhenian Sea – Italy)”** 32 IGC 2004 (Firenze)

Antonioli F., Caramanna G., Forti P., (2004) **“The present-day Italian sea level trend measured with a new methodology”** 32 IGC 2004 (Firenze)

Antonioli F., Caramanna G., Ferranti L., Kershaw S. (2004) **“A double mis 5.5 marine notch?”** 32 IGC 2004 (Firenze)

Caramanna G., Ciotoli G., Graciotti R., Nisio S., Quagliari P., Vita L. (2004) **“Sinkholes in Italy: inventory of natural phenomena and some case of study”** 32 IGC 2004 (Firenze)

Caramanna G., Ciotoli G., Ferrel L., Guerrieri L., Nisio S., Quagliari P., Vita L., Vittori E. (2004) **“Relations among seismogenic structures, earthquakes and sinkhole phenomena: a methodological approach in the Apennines (Italy)”** 32 IGC 2004 (Firenze)

Caramanna G., (2005) **“Scientific Diving and ROV techniques applied to the geomorphological and hydrogeological study of the world’s deepest karst sinkhole (Pozzo del Merro, Latium, Italy)”** 24th Diving for Science Symposium, American Academy of Underwater sciences 11-12 March 2005, Mystic, Connecticut (USA)

Caramanna G., Voltattorni N., Caramanna L., Cinti D., Galli G., Pizzino L., Quattrocchi F. (2005) **“Scientific Diving techniques applied to the geomorphological and geochemical study of some submarine volcanic gas vents (Aeolian Islands – Southern Tyrrhenian Sea – Italy)”** 24th Diving for Science Symposium American Academy of Underwater sciences, 11-12 March 2005, Mystic, Connecticut (USA)

Chiodini G., Caliro S., Caramanna G., Granieri D., Minopoli C., Moretti R., Perrotta L. (2006) **“Geochemistry of the submarine gaseous emissions of Panarea (Aeolian Islands, Southern Italy): magmatic vs hydrothermal origin and implications for volcanic surveillance”** *Pure Applied Geophysics* 63, 759-780.

Voltattorni N., Caramanna G., Cinti D., Galli G., Pizzino L., Quattrocchi F. (2006) **“Study of natural CO₂ emissions in different Italian geological scenarios”** Advances in the geological storage of carbon dioxide, NATO Science Series, Springer, 175-190

Nisio S., Caramanna G., Ciotoli G. (2007) **“Sinkholes in Italy: first results on the inventory and analysis”** Geological Society London, Special Publication, Vol. 279, 23-45

Caramanna G., Ciotoli G., Nisio S. (2008) **“A review of natural sinkhole phenomena in Italian plain areas”** *Natural Hazard*, Vol. 45 n. 2, May 2008

E. Manini, Luna G., Corinaldesi C., Zeppilli D., Bortoluzzi G., Caramanna G., Raffa F., Danovaro R. (2008) **“Prokaryote Diversity and Virus Abundance in Shallow Hydrothermal Vents of the Mediterranean Sea (Panarea Island) and the Pacific Ocean (North Sulawesi-Indonesia)”** *Microbial Ecology*, Vol. 55 n. 4, May 2008

Tassi F., Capaccioni B., Caramanna G., Cinti D., Montegrossi G., Pizzino L., Quattrocchi F., Valselli O. (2009) **“Low-pH waters discharging from submarine vents at Panarea Island (Aeolian Islands, southern Italy) after the 2002 gas blast: Origin of hydrothermal fluids and implications for volcanic surveillance”** *Applied Geochemistry*, 24/2, 246-254.

Voltattorni N., Sciarra A., Caramanna G., Cinti D., Pizzino L., Quattrocchi F. (2009) **“Gas geochemistry of natural analogues for the studies of geological CO₂ sequestration”** *Applied Geochemistry* 24, 1339-1346