INSTITUTIONAL INTERVIEWS - 2008

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Istituto Nazionale di Geofisica e Vulcanologia

A featured institution selection from *Essential Science Indicators*SM

In this month's Rising Star analysis, ScienceWatch.com *recognizes the Istituto Nazionale di Geofisica e Vulcanologia (INGV) as having the highest percent increase in total citations in the field of Geosciences from December 2007 to February 2008. According to* Essential Science Indicators *from Thomson Reuters, the current record of the INGV in this field includes 983 papers cited a total of 4,810 times.*

The INGV consists of several research sections located throughout Italy, and includes monitoring networks for earthquakes, volcanoes, and other geophysical phenomena. The INGV is currently the largest institution in Europe devoted to geosciences research.

In the interview below, President Enzo Boschi talks with us about the INGV's history and citation achievements.

SW: What factors or circumstances led to the formation of the INGV, and how do you account for the INGV's increase in the number of citations in the field of Geosciences in recent years?

INGV was born in 1999 through a merger of former ING, Istituto Nazionale di Geofisica, and four other national research institutes with expertise in different disciplines in the geosciences. The result has been the main permanent scientific forum in the Earth Sciences in Europe. The development plans were strongly based on young scientists—we count a lot on young researchers with exceptional potential, entrusting them with innovative basic and applied research projects. We also promote international collaborations. So, the increase in the number of citations in Geosciences is largely a result of this strategy, mainly based on the support of talented young staff.

SW: Does this reflect a deliberate plan to enhance the INGV's research effort in this field, or was this an unexpected or serendipitous development?

This is one of the results of the INGV development plans—we expect to have an excellent yield and to produce still more in the coming years. We picked up on some innovative findings, such as the role of solid Earth degassing in the atmospheric methane budget, or new volcanic geothermal and climate changes studies, which will be very important to us moving forward in the future. We're clearly happy with the results thus far.

SW: Are there specific areas of research within the realm of Geosciences on which the INGV particularly focuses?

Not specifically; INGV covers all main disciplines dealing with physical and chemical processes of the Earth with impact on society, environment and climate; that includes geophysics, volcanology, fluid and rock geochemistry, petroleum geology, atmospheric and ionospheric research, oceanography, climatology and environmental geology. We do not deal with paleontology, mineralogy, and crystallography.

"Many natural processes on Earth can be understood only through a multidisciplinary approach, in which long-term monitoring is one of the key strategies."

SW: Is there much shared work among divisions of the INGV, or with external organizations?

There is a fair amount of multidisciplinary research which requires collaborations among specialists in different fields; thus, there are people and groups from different departments working together. Collaboration with external institutions is then an essential part of our research strategy, because many studies cannot be conducted solely at the national level, but require international efforts. In this respect substantial activity is carried out in the framework of international projects and programs, but also in the framework of bilateral agreements with institutions of many countries.

SW: What is your prediction for the state of our knowledge about this particular field 10 years from now?

Many natural processes on Earth can be understood only through a multidisciplinary approach, in which long-term monitoring is one of the key strategies. So, we are working on the improvement of research infrastructures, including monitoring observatories and networks, and laboratories based on advanced technology. We expect to soon get some innovative results both in the field of solid earth geophysics and environmental processes also involving the sea and the atmosphere.

SW: What research fields or capabilities do you see as critical for the future of the INGV, and what are the implications of the INGV's work for the future of this particular field or neighboring fields?

INGV must adjust itself and follow science and societal needs and evolution, with particular reference to geo-hazards, environmental risks, and global changes. Therefore, a strong specialization and know-how in these sectors is necessary. However, basic research in geophysics and geochemistry cannot be forgotten, because society cannot evolve without new findings and theories. We also believe that a synergy between science and industry, including small enterprises, is fundamental for the development of scientific and technological products, such as new instruments or monitoring stations, from which civil protection and society can benefit.

Enzo Boschi, President
Istituto Nazionale di Geofisica e Vulcanologia (INGV)
Rome, Italy

Istituto Nazionale di Geofisica e Vulcanologia's most-cited paper with 71 cites to date:

Pondrelli S, *et al.*, "European-Mediterranean regional centroid-moment tensors: 1997-2000," *Phys. Earth Planet Interiors* 130: 71-101, 2002. Source: *Essential Science Indicators* from Thomson Reuters.

Keywords: national research institutes, italy, geophysics, volcanology, geothermal studies, climate change, geochemistry, petroleum geology, oceanography, environmental geology, atmospheric research, ionospheric research.

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