



## Volcanic unrest in Europe and Latin America: Phenomenology, eruption precursors, hazard forecast, and risk mitigation



### Springer Book Proposal



The VUELCO book proposal was approved by IAVCEI and Springer. It will be published in Springer's Advances in Volcanology book series. WP leaders and others of the team met at the Altes Klosters Hotel in Hainburg, to discuss the chapter content and begin to assemble this thematic publication. During the three day meeting, members formed break out writing groups and finalised with a summary session to discuss how to take things forward.

### VUELCO Short Course 10-15 May 2015



The VUELCO short course was held in Dominica where the team and delegates of the course were able to examine the geology of the island on field trips as well as learn from lectures and then take part in a simulated unrest exercise at the Office of Disaster Management.

The island of Dominica is located within the Lesser Antilles Island Arc and has 9 volcanic centres, which are considered to have the potential to erupt in the future. Dominica is largely comprised of volcanic rocks and their weathering products. There is historic volcanic activity on the island which continues to the present day. The island has had frequent swarms of volcanic earthquakes since the 1700s but has only had two eruptions.

The simulation exercise was designed to test the effectiveness of a number of tools and products derived from the VUELCO project during its final year. It also tested various aspects of the Dominica Volcanic Emergency Plan, which was updated in 2014 through funds provided by DIPECHO in a project administered by the French Red Cross (Watts, 2015). Finally, it was also used to test aspects of the CARICOM Regional Response Mechanism (RRM) and the SRC's emergency protocols for the management of volcanic emergencies. The CDEMA Coordinating Unit (CDEMA-CU) in Barbados was also involved. See website for video of short course and photo gallery. [www.vuelco.net/videos.php](http://www.vuelco.net/videos.php)

Start: October 1, 2011  
Duration: 48 months



#### European Partners:

University of Bristol (UK)  
(Coordinator)  
University of Leeds (UK)  
University of Munich (D)  
CSIC (Spain)  
INGV (Italy)  
DPC (Italy)  
CNRS (France)

#### Overseas Partners:

Geophysical Institute (Ecuador)  
UNAM (Mexico)  
University of the West Indies  
(UWI)

#### VUELCO WEBSITE

[www.vuelco.net](http://www.vuelco.net)  

See website to follow us on  
Facebook and Twitter



## VUELCO Short Course, 6-14 November 2014, Quito, Ecuador



Members of the VUELCO consortium held a short course in Quito. It was attended by about 50 people from 12 different countries with the aim of more clearly understanding the causes of volcanic unrest. The team took a field trip to the Cotopaxi National Park, which provided an opportunity to examine geophysical materials in the field. They met with authorities in

Latacunga and visited areas nearby to examine the landscape and rock history to learn about the kinds of eruptions that have occurred.

At the ECU911 centre, a simulation exercise was conducted involving ECU staff, the local authorities and the VUELCO team. Unrest signals were received and the data analysed by all the expertise in attendance.



Throughout the week, there was scientific, legal and social science expertise on hand for lectures and presentations and many in attendance had personal experience of dealing with volcanic eruptions in the Philippines, Latin America and other parts of the globe.

### Cotopaxi, Ecuador

Ecuador is a country with more than 100 volcanoes, around 40 of which are potentially active.

Cotopaxi is just one of a number of the active volcanoes surrounding the city of Quito. This ice-capped stratovolcano is 5,897m high and is situated around 35 miles from Quito in the

Cotopaxi National Park. Evidence of Lahars, lava flows and ash deposits can be seen here from historic eruptions.

Cotopaxi is of particular interest to the VUELCO project because it's one of the most active and hazardous volcanoes in Ecuador. Recent studies estimate that on average, one explosive, lahar triggering event has occurred every 117 years over the past millennia.

### Cities on Volcanoes 8 September 2014, Yogyakarta, Indonesia

VUELCO members attended the COV8 event in Yogyakarta, Indonesia from 9-13 September 2014, where hundreds of volcanologists from around the globe gathered to discuss living in harmony with volcanoes. The cultural practices of those living close to volcanoes was discussed as well as

how science and technology can be integrated with local cultures to reduce the risk of disaster. There were field trips, discussions and presentations and demonstrations of emergency response to disaster.



### Dominica 2015



## THE SIX TARGET VOLCANOES

The VUELCO project will be conducting research on the following volcanoes:

- Flegrei, Italy
- Cotopaxi, Ecuador
- Morne aux Diabes, Dominica
- Popocatépetl, Mexico
- Soufrière Hills, Montserrat
- Teide, Tenerife

Further details of each volcano can be seen at [www.vuelco.net](http://www.vuelco.net)

## ABOUT VUELCO

VUELCO is an international multi-disciplinary consortium, combining fundamental research into causes and effects of volcanic unrest with uncertainty assessment and probabilistic forecasting to improve communication, decision-making and management during volcanic unrest. The primary project objective is to significantly improve our understanding of the processes behind volcanic unrest and the ability to forecast its outcome aiding decision-making and management in an unrest situation. See [www.vuelco.net](http://www.vuelco.net) for further details.

## FUNDING

The VUELCO project is funded by a €3.5 million grant by the EC.



## CONTACT DETAILS:

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