International Association of Volcanology and Chemistry of the Earth's Interior

IAVCEI Commission of Volcanic Lakes
7th Workshop on Volcanic Lakes
Costa Rica
10-21 March 2010

International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI)
Escuela Centroamericana de Geología, Universidad de Costa Rica (ECG-UCR)
Centro de Investigaciones en Ciencias Geológicas (CICG-UCR)
Centros de Investigación en Ciencias del Mar y Limnología (CIMAR-UCR)
Red Sismológica Nacional (RSN: ICE-UCR)
Volcanological and Seismological Observatory of Costa Rica, Universidad Nacional (OVSICORI-UNA)

Poás Volcano

PRESENTS

On behalf of the hosting volcanological community of the *Universidad de Costa Rica-San José* and the *Universidad Nacional-Heredia* we are delighted to invite you to the **7th Workshop of the IAVCEI Commission of Volcanic Lakes (CVL-IAVCEI)**, to be held in **Costa Rica** from **10 to 21 March 2010**.

This meeting will bring together a group of volcanologists, geochemists, limnologists and geothermal researchers interested in volcanic lakes and volcanic degassing. Its main goal is to streamline the efforts to develop effective strategies for volcanic lake monitoring and research, as well as to strengthen the mitigation of hazards posed by volcanic lakes.

Scientific Program

- Theoretical and practical aspects of volcanic lakes and involved gas-water-rock interactions.
- Crater lake dynamics, chemistry and limnology, and their impact on the human and natural environment.
- Discussion on new developments in sampling and analytical methods.
- Discussion on the interpretation of fluid geochemical models of crater lakes, and generalizations.
- Renewed attention will go to "lake-Nyos type" degassing volcanic lakes.

Conference location
San José, Costa Rica

There will be several days of talks and poster presentations at *the Escuela Centroamericana de Geología* of the *Universidad de Costa Rica*. The number of days of talks depends on the number of presenters. Talks will be organized in a familiar atmosphere. The days of the oral sessions are not fixed, and depends on the weather conditions affecting the logistics of the field trip part of the workshop. Each talk will have a duration of 20 minutes (including presentation, discussion, and changeover).
Poster sessions will be held at OVSICORI-UNA, combined with a tour of the laboratory facilities of the observatory in Heredia. Poster sessions are preceded by short "snapshot talks" (approx. 3') to introduce each poster.

Scientific contributions

Abstract format: in English, 1 page A4, Times New Roman, format 12, spacing 1.5

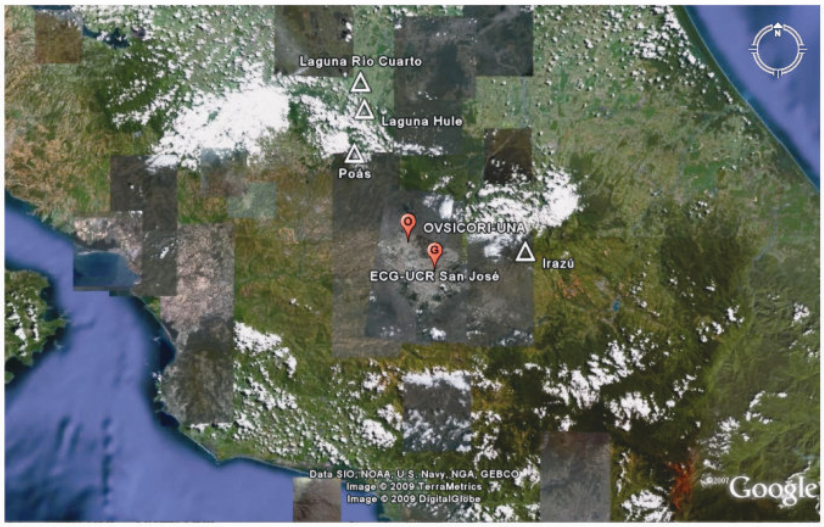
Poster format: 80x100 cm

The submitted abstracts will be reviewed by the Scientific Committee before acceptance

Abstract submission deadline: 31 October 2009

Field trips

Costa Rica is situated in a subtropical zone and hosts several crater lake bearing volcanoes, which show a wide range in activity style and state, resulting in crater lakes with variable degassing conditions, dynamics and chemistry… **the ideal scenario to organize a crater lake workshop!**



The visited volcanic lakes and lagoons during the field work part of the workshop are:

1. **Poás: Laguna Caliente and Botos**
   Focus: the ultra-acidic lake of Poás volcano (Laguna Caliente) and the slightly acidic Botos. This field trip will afford opportunities to discuss the geology, history, and current volcanic state of Poás volcano, as well as to sample and measure the temperature, pH, conductivity, and excess dissolved SO_2 and H_2S gases of the waters of the Poás acidic lake. Laguna Caliente is one of the largest reservoirs of a hyper-saline ultra-acidic brine at the Earth's surface.

Poás volcano, Laguna Caliente (left) and Botos

2. Irazú:

Focus: the Irazú crater lake tops an active hydrothermal system, which is less degassing than at Poás (pH of Irazú crater lake has ranged between 5.8 and 8.0 between 1999 and 2007, Martínez 2008). Weak degassing occurs through this lake. Near-boiling temperature fumaroles near the summit could be sampled as well. Some algae and other bio-organisms can be found in the lake water. Ropes are needed to descend the currently active crater of Irazú.

Irazú volcano

3. Laguna Hule:

Focus: Laguna Hule, 12 km north of Poás volcano, is supposed to be a "Nyos-type" volcanic lake. We will examine the limnological, chemical and thermal stratification of the lake through vertical profiles, and discover the saturation state of the dissolved gas content of the lake bottom waters.

Laguna Hule

4. **Laguna Río Cuarto:**
   Focus: A similar situation as at Laguna Hule is true for Laguna Río Cuarto. This lake has a maximum depth of ca. 70 m, which makes it the deepest natural lake of Costa Rica. It is located 400 m a.s.l. in Sarapiquí-Heredia and it comprehends a surface of approximately 40 ha. Because of its rich biodiversity, the region at the surroundings of the Río Cuarto lake has a significant importance for tourism purposes. Some bathymetric surveys have been recently conducted at this lake in order to study its chemical and biological stratification (Tassi et al., 2009).

Laguna Río Cuarto

Field trip logistics

March should be within the hottest (18-26°C) and driest periods of the year, the tropical climate of Costa Rica permitting. At the volcano summits (highest elevation at Irazú ~3,430 m a.s.l.), temperatures can be considerably lower and the probability it will rain is higher. So, participants should also be prepared for more chilly and wetter situations.
Most volcanoes are near San José and can be visited in day trips. The group will move in vans to the volcanoes, leaving the hotel early in the morning. Overnights near Laguna Hule and Río Cuarto is needed to ease logistics there.

For the field trips, it is recommended to bring/wear:
(1) a pair of comfortable hiking boots, warm clothing (fleece), and raincoat to go to the summit of volcanoes.
(2) light-fresh casual clothes, i.e. old jeans, undesirable shirts and socks (a change after a rain shower!).
(3) sunscreen, sunglasses, and hats are also recommended
(4) a gas mask (full-face is desired at Poás), to protect the respiratory system.
(5) a helmet-hard hat.
(6) leather and rubber gloves for sampling and protection.
(7) a photographic/video camera and binoculars.

NB:
* People who are interested in scuba diving in the lakes (Laguna Hule and Río Cuarto), please let us know in advance if you need special equipment (respiration tanks).
* Please let us know in advance who needs a rubber boat for the lake profile sampling.

Hotels San José

We propose three hotels. Each hotel is at 5-10 minutes walk from the *Escuela Centroamericana de Geología of Universidad de Costa Rica*, the base of the congress. The cost of the hotels varies from $30 to $70 per room/day, including breakfast. Further details on the hotels and reservations will follow soon in the second circular.

Registration and costs

Pre-registration:
If you are interested in participating at CVL7, please send us an email, so we can keep you informed on further evolutions:

cvl7costarica@gmail.com

For further information, feel free to contact us at the same email address.

The official inscription deadline will be: 30 November 2009

Further details on the registration and cost of the workshop will soon follow in a second circular

7th CVL Workshop Organizing Committee

- Carlos Ramírez ECG, CICG, UCR, Costa Rica
- Raúl Mora CICG, RSN, UCR, Costa Rica
- María Martínez OVSICORI-UNA, Costa Rica
- Erick Fernández OVSICORI-UNA, Costa Rica
- Gerardo Umaña CIMAR, UCR, Costa Rica
- Franco Tassi Università degli Studi di Firenze, Italy
- Dmitri Rouwet INGV-PALERMO, Italy

7th CVL Workshop Scientific Committee

Work in progress...